Vascular Study Group of Greater New York

October 5, 2017
The Westin Savannah Harbor
Savannah, GA
# Agenda:

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00-7:30</td>
<td>Breakfast</td>
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<tr>
<td>7:30-8:15</td>
<td>Welcome and Introductions</td>
<td>Apostolos Tassiopoulos, MD</td>
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<tr>
<td></td>
<td>Follow-up on the Spring/VAM 2017</td>
<td></td>
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<tr>
<td></td>
<td>- Bylaws changes</td>
<td></td>
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<tr>
<td></td>
<td>- Nomination form/process</td>
<td></td>
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<tr>
<td></td>
<td>- Regional meeting location</td>
<td></td>
</tr>
<tr>
<td>8:15-8:30</td>
<td>National VQI Update (Remote)</td>
<td>Carrie Bosela, SVS/PSO</td>
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<tr>
<td>8:30-9:30</td>
<td>Regional Data Review &amp; Informal discussion</td>
<td>Apostolos Tassiopoulos, MD</td>
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<tr>
<td>9:30-10:15</td>
<td>Research project/Presentation</td>
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<tr>
<td></td>
<td>1) “Experience and outcomes with TCAR Procedures at SBU”</td>
<td>Angela Kokkosis MD</td>
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<tr>
<td></td>
<td>2) VQI Influence on Quality Improvement: What VQI Can Do for You</td>
<td>Roger Walcott MD</td>
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<tr>
<td></td>
<td>3) QI project for transfusion with TEVAR and LE bypass</td>
<td>Sikander Khan MD</td>
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<tr>
<td></td>
<td>4) VQI Discharge Medications Review and Analysis</td>
<td>Glen Jacobowitz MD</td>
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<tr>
<td>10:15-10:30</td>
<td>Break</td>
<td></td>
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<tr>
<td>10:30-10:45</td>
<td>Arterial Quality Council Update</td>
<td>Darren Schneider, MD</td>
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<tr>
<td>10:45-11:00</td>
<td>Venous Quality Council Update</td>
<td>Krish Soundararajan MD</td>
</tr>
<tr>
<td>11:00-11:15</td>
<td>Research Advisory Council Update</td>
<td>Glenn Jacobowitz, MD</td>
</tr>
<tr>
<td>11:15-11:30</td>
<td>Governing Council Committee Update</td>
<td>Carrie Bosela SVS/PSO (Remote)</td>
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<tr>
<td>11:30-11:45</td>
<td>M2S Development Update</td>
<td>Debbie Macaulay/M2S</td>
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<tr>
<td>11:45-11:50</td>
<td>Expanding Participation</td>
<td>Debbie Macaulay/M2S</td>
</tr>
<tr>
<td>11:50-12:00</td>
<td>Next meeting and Adjourn</td>
<td></td>
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</table>
Data Managers Meeting:

Data Managers Meeting to convene after lunch
(Lunch will not be provided)

12:30-2:30/3:00 Data managers meeting open to all data managers.

- Open discussions and queries regarding modules
- Interactive open forum for research ideas and data analysis
- Directing proper resources for help on the modules
Welcome and Introductions

Beth Israel Medical Center
Catholic Health Mercy Hospital of Buffalo
Catholic Health Sister of Charity Hospital
John T. Mather Memorial Hospital
Kaleida Health
Lenox Hill Hospital
Long Island Jewish Medical Center
Maimonides Medical Center
Montefiore Medical Center
Mount Sinai Hospital
Mount Sinai St. Luke's-Roosevelt Hospital
North Shore University Hospital

New York Presbyterian
NYU Langone Medical Center
St. Charles Hospital
Staten Island University Hospital - Stony Brook University Medical Center
The Vascular Group LLC
University Hospital
University of Rochester Medical Center
Weill Cornell Medical College
Westchester Medical Center
<table>
<thead>
<tr>
<th>Top Potential Members</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bassett Medical Center</td>
<td>Cooperstown</td>
<td>NY</td>
<td>Prospect</td>
</tr>
<tr>
<td>New York Presbyterian Queens Hospital</td>
<td>Flushing</td>
<td>NY</td>
<td>Contracting</td>
</tr>
<tr>
<td>St. Francis Hospital</td>
<td>Roslyn</td>
<td>NY</td>
<td>Prospect</td>
</tr>
<tr>
<td>Vassar Brothers Medical Center</td>
<td>Poughkeepsie</td>
<td>NY</td>
<td>Verbal Award</td>
</tr>
</tbody>
</table>
Action Items from Last Meeting

• Bylaws changes

• Nomination form changes

• Vote to unblind LTFU report
Contracts:
- In addition to the total SVS annual fee a fee of $200 per center to be collected and accrued annually. This additional fee is to cover taxes associated with maintaining non for profit fiduciary agent, cost for state reporting, and to cover costs of the bi-annual meetings.

Executive Committee (EC):
For any member from Lead Physician group to be part of EC committee;
- A center should be participated for at least 2 years.
- Willingness to pay all agreed dues.
- Attends 75% of meetings in consecutive 2 years.
- Show active participation in VSGGNY matters
- Non participation and nonattendance will be proportional to revoking voting rights.

- The EC oversees the interaction of VSGGNY with the FEDUCIARY AGENT, including costs and contractual details for VSGGNY Member participation.
- The EC may designate other committees as necessary to conduct the business of VSGGNY.
• **Committees Terms:**
For all the three committees Arterial Quality Committee (AQC), Venous Quality Committee (VQC), Research Advisory Committee (RAC): The Chairs of all 3 committees the will represent VSGGNY on the SVS PSO National Quality Committee for a three (3) year consecutive renewable term.

• **Staff:**
The Medical Director: will represent VSGGNY on the SVS PSO National Governing Council unless the EC decides to elect someone else in the region. A 75% attendance criteria to qualify for nomination of the medical director.
- Nominees must attend at 75% of the regional meetings every 2 years
- Nominee should accept the nomination before EC vote
- Nominee’s center is required to provide Admin support for the regional meetings
Potential Nominee Candidates only

Please fill out the questionnaire to the nominated position/s. The EC and Medical Director will vote on all the candidates after reviewing these forms.

1) Which position you have been nominated for (You can choose multiple choices)
   a) Arterial Quality Committee Chair
   b) Vascular Committee Chair
   c) Medical Director

2) How long has your center been participating in the SVS-PSO/VQI database.
   Year joined: ____________________________
   Years Active: ____________________________

3) How many of the VSGGNY bi-annual regional meetings you have attended in past two years Yes/No/Comments.
   Fall 2015: ____________________________
   Spring 2016: ____________________________
   Fall 2016: ____________________________
   Spring 2017: ____________________________

4) As a Medical Director for directorial office work will your office be able to:
   a) Provide admin support for directorial office work: Yes/No/Comments
   ____________________________
   b) If not will your center will offer paid support to outside member in the VSGGNY group: Yes/No/Comments
   ____________________________
National VQI Update: 
Carrie Bosela, SVS PSO
Number of Participating Centers

Location of VQI Participating Centers

433 Centers, 46 States + Canada
18 Regional Quality Groups
### Total Procedures Captured (as of 8/1/2017)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peripheral Vascular Intervention</td>
<td>126,118</td>
</tr>
<tr>
<td>Carotid Endarterectomy</td>
<td>86,926</td>
</tr>
<tr>
<td>Infra-Inguinal Bypass</td>
<td>39,069</td>
</tr>
<tr>
<td>Endovascular AAA Repair</td>
<td>34,834</td>
</tr>
<tr>
<td>Hemodialysis Access</td>
<td>32,943</td>
</tr>
<tr>
<td>Carotid Artery Stent</td>
<td>16,334</td>
</tr>
<tr>
<td>Varicose Vein</td>
<td>13,545</td>
</tr>
<tr>
<td>Supra-Inguinal Bypass</td>
<td>13,130</td>
</tr>
<tr>
<td>Open AAA Repair</td>
<td>9,839</td>
</tr>
<tr>
<td>Thoracic and Complex EVAR</td>
<td>9,311</td>
</tr>
<tr>
<td>IVC Filter</td>
<td>8,094</td>
</tr>
<tr>
<td>Lower Extremity Amputations</td>
<td>8,043</td>
</tr>
</tbody>
</table>

| Count | 398,186 |

### VQI Total Procedure Volume

Total Procedure Volume tab reflects net procedures added to the registry for the month.
VSGGNY Website:

VQI@VAM 2017 Feedback:

• Overall, the Meeting was well received with sessions being evaluated as having met/exceeded expectations.

• Most Useful/Successful Sessions:
  – Breakout sessions (Tuesday, Registry focus)
  – Poster session
  – LTFU
  – Would like more on Analytics Engine

• Areas for Improvement
  – Breakout sessions – not enough detail, repetitive
  – OBL – not relevant
  – EPIC – not relevant to non-EPIC sites
  – Would like more on Analytics Engine
  – Would have preferred complex cases for Tues.
  – More on PVI and TEVAR
• Resources are now in the VQI Members Only Website
• All PowerPoint Presentations and Poster Session PDFs
• Full Video from the Sessions on Wednesday
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 (discharge medications)
✓ 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.
Two National QI Project Resources

**Discharge Medications** (available at [http://www.vascularqualityinitiative.org/vqi-resource-library/quality-improvement](http://www.vascularqualityinitiative.org/vqi-resource-library/quality-improvement) or the members only website)

- Feb. 2017 webinar slides and transcripts (Randy DeMartino from Mayo and Cheryl Jackson from Central DuPage/Northwestern)
- Posters (Gerard DuPrat/Catherine Bringedahl from Memorial Hospital South Bend, Yuming Lin from U of FL and Rosha Nodine from Baylor – winning poster)
EVAR LTFU Imaging (available at http://www.vascularqualityinitiative.org/vqi-resource-library/quality-improvement or member only website)

• April 2017 webinar slides and transcripts (Adam Beck from UAB and Salvatore Scali from U of FL)

• Posters (Ali Arak/Fern Schwartz from UPMC and Nilima Lovekar and Olympia Christoforatos at Stonybrook)

• Transcripts and slides from June 2017 VQI@VAM panel session: Increasing Follow-up Imaging Rates at 1 Year for EVAR Patients – moderated by Adam Beck and Salvatore Scali and panelists: Julie Beckstrom (U of Utah) Karen Heany (Sharp) Carlos Moreno (Stanford) and Megan Pepin (Ohio State)

• Physician reports on EVAR LTFU: Sent on Aug. 2nd
Recorded and on the website:

• How to verify your 2017 participation status so you will know if you need to submit data to MIPS;
• How to report a quality measure via your Medicare claims form;
• Specifics on how to attest to having performed a clinical improvement activity;
• Information on the five activities that comprise the base score on use of electronic health records; and
• How all these step-by-step examples will help you to avoid a 4% penalty in 2019.
• Frequently Asked Questions (FAQ)s
• MIPS information that VQI can submit for you and how you can submit information for MIPS on your own
MIPS Proposed Timeline for 2019 Payment

Why I should care NOW

PERFORMANCE YEAR

SUBMIT DATA

FEEDBACK AVAILABLE

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

Enrollment in 2017 MIPS, using M2S as your approved QCDR vendor, takes place between June 1st and October 1, 2017. Submission of PQRS data to CMS for 2017 MIPS Quality Component occurs in early March 2018.
Topics for the educational webinars in the second half of 2017 include:

**July:** MACRA/MIPS

**August:** IVCF Retrieval Report

**September:** Quality Improvement (TBD)

**October:** Medicine Registry, Analytic Engine Basics

**November:** Changes to Participation Award, Analytic Engine Advanced

**December:** Difficult Case Abstraction (TBD)
Participation Award potential changes:

- There will be 4 categories scored, each on a 0-6 point scale:
  - LTFU
  - Meeting attendance
  - QI project involvement
  - Number of registry subscriptions
Participation Award potential changes:

- Scores for the categories will be weighted 4, 3, 2, 1 for LTFU, meeting attendance, QI projects, and # of registry subscriptions, respectively. Therefore, the final score will be calculated as follows:

- Total points = 4 x LTFU score + 3 x Attendance score + 2 x QI project score + 1 x Registry score
Participation Award potential changes:

LTFU (no change from present)
- <70% = 0 points
- >=70% = 2
- >=80% = 4
- >=90% = 6
Participation Award potential changes:

Meeting attendance

• Each regional meeting will be scored on a 0-3 point scale, the same way we are doing it now:
  – For centers with 3 or more MDs, 1 point for each MD attending, up to a max of 3 points
  – If site has only 2 MDs and 1 attends, 2 points
  – If site has <3 MDs and all attend, 3 points
  – Extra point for support staff attending with an MD (but not if it pushes total for that meeting over 3 points).
  – If no MD attends, 0 points, regardless of support staff attendance. (will discuss with Participation Award Committee)
• If total score for both meetings is < 6 points, the center can receive an additional point if any non-physician staff member attends the Annual VQI meeting at VAM
Participation Award potential changes:

Registry subscriptions

- 1-2 registries = 0 points
- 3-5 registries = 2
- 6-8 registries = 4
- ≥ 9 registries = 6

• If the center is a vein-only center (i.e. could only possibly subscribe to 1 registry) = 1 point
Participation Award potential changes:

QI project involvement
Scoring on 0 – 6 point scale to keep consistent with other measures.

- Initiation of a QI Project, evidenced by submitting a Project Charter
- Submitting two Progress Report on a QI Project
- Presenting a QI Project to Hospital C-suite, at a VQI Regional Meeting or at a VQI Annual Meeting Poster Session
- Presenting a QI Project at a National or Regional Vascular Meeting or in a Peer Reviewed Journal
- Submit a final or evaluation report
- Improvement of rates on National QI Initiatives, or maintaining excellent performance rates (Bonus Point)
Regional Reports:

Apostolos Tassiopoulos, 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 June 30, 2017.
New Dashboard!!!!

Dashboard

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 exclusion criteria (see the full report for details). In the “Region” and “VQI” columns, the numbers represent the 25th, 50th (median) and 75th percentiles for centers in your region and across all centers in the VQI.

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

Unless otherwise noted, the timeframe for all outcomes is Jan. 1, 2016-May 31, 2017. For more details about each outcome, click on the name of report in the table of contents at left.
| Registry          | Outcome                              | Your Center, % (n/N) | Region [25p|50p|75p] | VQI [25p|50p|75p] |
|-------------------|--------------------------------------|----------------------|--------------------------|-------------------|
| All               | Total Procedure Volume               | [59 | 490 | 879]               | [55 | 196 | 434]               |
| Multiple (2014-15)| Long-Term Follow-Up                 | [40% | 62% | 75%]               | [43% | 70% | 86%]               |
| Multiple          | Discharge Medications                | [66% | 74% | 81%]               | [71% | 60% | 67%]               |
| AVACCESS          | Primary AVF vs. Graft                | [83% | 88% | 91%]               | [78% | 85% | 94%]               |
| CEA               | In-Hospital Stroke/Death             | [0% | 0% | 1%]                | [0% | 0% | 1%]                |
| CEA               | LOS>1 Day                            | [16% | 26% | 29%]               | [14% | 23% | 33%]               |
| EVAR              | LOS>2 Days                           | [10% | 14% | 20%]               | [7% | 13% | 21%]               |
| EVAR (2014-15)    | Sac Diameter at LTFU                 | [27% | 48% | 61%]               | [31% | 55% | 70%]               |
| INFRA             | Chlorhexidine Skin Prep              | [94% | 98% | 100%]              | [89% | 98% | 100%]              |
| INFRA             | Major Complications                  | [0% | 1% | 7%]                | [0% | 0% | 6%]                |
| IVCF (2016)       | Filter Retrieval                     | [29% | 47% | 61%]               | [5% | 15% | 46%]               |
| OAAA              | In-Hospital Mortality                | [0% | 0% | 7%]                | [0% | 0% | 0%]                |
| OAAA              | Median LOS (Days)                    | [6.5 | 8 | 8.5]               | [6 | 7 | 8]                |
| PVI               | Ultrasound Guidance                  | [82% | 98% | 99%]              | [55% | 86% | 97%]              |
| PVI               | ABI/TBI Reported                     | [51% | 66% | 82%]               | [60% | 75% | 89%]               |
| VV (2015)         | PROMs at LTFU                        | NA (<3 centers)       | [61% | 100% | 100%]              |
Total Procedure Volume, All Years (2003-May 2017)

<table>
<thead>
<tr>
<th>Your Region (N)</th>
<th>VQI (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>675</td>
</tr>
<tr>
<td>CEA</td>
<td>3161</td>
</tr>
<tr>
<td>EVAR</td>
<td>2134</td>
</tr>
<tr>
<td>HEMO</td>
<td>2618</td>
</tr>
<tr>
<td>INFRA</td>
<td>1821</td>
</tr>
<tr>
<td>OAAA</td>
<td>199</td>
</tr>
<tr>
<td>PVI</td>
<td>9263</td>
</tr>
<tr>
<td>SUPRA</td>
<td>630</td>
</tr>
<tr>
<td>TEVAR</td>
<td>507</td>
</tr>
<tr>
<td>IVCF</td>
<td>869</td>
</tr>
<tr>
<td>Varicose Veins</td>
<td>NA (&lt;3 centers)</td>
</tr>
<tr>
<td>LEAMP</td>
<td>443</td>
</tr>
<tr>
<td>Overall</td>
<td>24948</td>
</tr>
</tbody>
</table>
“Others” indicates centers that do not belong to a regional group.
Physician Specialties by Region (As of June 30, 2017)

Physician Specialties Across VQI (as of June 2017, N=3251 Physicians)
Physician Specialties Across Your Region (as of June 2017, N=171 Physicians)
### Percentage of Procedures With 9 Months or Greater Follow-Up (Jan. 1, 2014-June 30, 2015)

<table>
<thead>
<tr>
<th>Your Region</th>
<th>Your Region</th>
<th>VQI</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>186 (68%)</td>
<td>3810 (68%)</td>
</tr>
<tr>
<td>CEA</td>
<td>937 (59%)</td>
<td>22068 (69%)</td>
</tr>
<tr>
<td>EVAR</td>
<td>676 (70%)</td>
<td>8621 (72%)</td>
</tr>
<tr>
<td>HEMO</td>
<td>769 (49%)</td>
<td>9930 (63%)</td>
</tr>
<tr>
<td>INFRA</td>
<td>596 (67%)</td>
<td>8975 (72%)</td>
</tr>
<tr>
<td>OAAA</td>
<td>57 (67%)</td>
<td>2080 (74%)</td>
</tr>
<tr>
<td>PVI</td>
<td>2949 (63%)</td>
<td>32111 (68%)</td>
</tr>
<tr>
<td>SUPRA</td>
<td>212 (61%)</td>
<td>3128 (71%)</td>
</tr>
<tr>
<td>TEVAR</td>
<td>148 (67%)</td>
<td>2434 (70%)</td>
</tr>
<tr>
<td>IVCF</td>
<td>362 (59%)</td>
<td>2862 (65%)</td>
</tr>
<tr>
<td>LEAMP</td>
<td>164 (74%)</td>
<td>2717 (69%)</td>
</tr>
<tr>
<td>2014 overall</td>
<td>4464 (68%)</td>
<td>63264 (71%)</td>
</tr>
<tr>
<td>2015 overall</td>
<td>2592 (52%)</td>
<td>35472 (65%)</td>
</tr>
</tbody>
</table>
Long-Term Follow-Up by Center in Your Region (2014–June 2015)

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

Long-Term Follow-Up by Region Across VQI (2014–June 2015)

*Others* indicates centers that do not belong to a regional group. *** indicates region’s rate differs significantly from the VQI rate.
Discharge Medications (Jan. 1, 2016-May 31, 2017)
Excludes patients who died in hospital and patients who were not treated for medical reason or non-compliant.

**Discharge Antiplatelet+Statin Rate by Center in Your Region (2016-May 2017)**

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

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**Discharge Antiplatelet+Statin Rate by Region Across VQI (2016-May 2017)**

- **Virginia**
- **New York**
- **Pacific**
- **Southwest**
- **Rocky Mts**
- **N. Cal**
- **Canada**
- **SOONET**
- **Mid-South**
- **Mid-Atlantic**
- **Mid-America**
- **Others**
- **Up**
- **Midwest**
- **Southeast**
- **Midwest**
- **S. Col**
- **O Lakes**
- **New England**
- **Michigan**

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"Others" indicates centers that do not belong to a regional group. "***" indicates region's rate differs significantly from the VQI rate.
Excludes patients with previous access procedure in the same arm

<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>717</td>
<td>7169</td>
</tr>
<tr>
<td>Percentage with primary AVF</td>
<td>87%</td>
<td>84%</td>
</tr>
</tbody>
</table>
Rate of Primary AVF Access in Your Region (2016-May 2017)

- 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-May 2017)

- Mid-America
- Mid-Atlantic
- Rocky Mtns.
- So. Cal.
- Midwest
- Michigan
- VQI
- Virginia
- New England
- SouthEast
- Carolinas

"Others" indicates centers that do not belong to a regional group. "***" indicates region's rate differs significantly from the VQI rate.
Carotid Endarterectomy: Stroke or Death in Hospital  
(Jan. 1, 2016-May 31, 2017)  
Elective procedures, excluding prior ipsilateral CEA and concomitant CABG, endovascular or other arterial 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 CEA procedures meeting inclusion criteria</td>
<td>887</td>
<td>18430</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td>0.6%</td>
<td>1.2%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>833</td>
<td>17342</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td>0.6%</td>
<td>1.2%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of stroke or death among cases with complete data*</td>
<td>1.1%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.19</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 in Your Region (2016-May 2017)

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-May 2017)

"Others" indicates centers that do not belong to a regional group. *** indicates region's observed rate differs significantly from its expected rate.
Rate of In-Hospital Stroke or Death After CEA by Year

- Your Center
- Your region
- VQI Overall
Carotid Endarterectomy: Percentage of Patients with LOS>1 Day
(Jan. 1, 2016-May 31, 2017)

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.

<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>771</td>
<td>16490</td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;1 day among procedures meeting inclusion criteria</td>
<td>23%</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data *</td>
<td>733</td>
<td>15707</td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;1 among cases with complete data</td>
<td>23%</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of LOS&gt;1 among cases with complete data *</td>
<td>25%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.47</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 in Your Region (2016-May 2017)

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

Rate of CEA Patients With LOS>1 Day by Region Across VQI (2016-May 2017)

* Others indicates centers that do not belong to a regional group. * * * indicates region's observed rate differs significantly from its expected rate.
Endovascular AAA Repair: Percentage of Patients with LOS>2 Days (Jan. 1, 2016-May 31, 2017)

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

<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 meeting inclusion criteria</td>
<td>488</td>
<td>6525</td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;2 days among procedures meeting inclusion criteria</td>
<td>15%</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data</td>
<td>467</td>
<td>6058</td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;2 among cases with complete data</td>
<td>15%</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of LOS&gt;2 among cases with complete data</td>
<td>14%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.69</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 EVAR Patients With LOS>2 Days in Your Region (2016-May 2017)

- 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 (2016-May 2017)

- Observed
- Expected

"Other" indicates centers that do not belong to a regional group. *** indicates region's observed rate differs significantly from its expected rate.
EVAR: Rate of Sac Diameter Reporting at Long-Term Follow-Up (Jan. 1, 2014-June 30, 2015)

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 Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of EVAR procedures</td>
<td>676</td>
<td>8621</td>
</tr>
<tr>
<td>Percentage with sac diameter recorded at follow-up</td>
<td>47%</td>
<td>54%</td>
</tr>
</tbody>
</table>
Rate of LTFU Sac Diameter Reporting in Your Region (2014-June 30, 2015)

- 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-June 30, 2015)

- Virginiast
- So. Cal.
- Southeast
- New York
- SOVONET
- Mid-Atlantic
- New England
- Rocky Mtns.
- VQI
- Midwest
- Nor.
- Cal.
- Carolinas
- Pacific NW
- Up. Midwest
- Michigan
- Mid-America
- G. Lakes

"Others" indicates centers that do not belong to a regional group. "***" indicates region's rate differs significantly from the VQI rate.
Infrainguinal Bypass: Percentage of Procedures with Chlorhexidine or Chlorhexidine+Alcohol Skin Prep (Jan. 1, 2016-May 31, 2017)

In VQI patients, chlorhexidine and chlorhexidine+alcohol skin preps have been shown to reduce the surgical-site infection rate by 50% compared to iodine-based skin prep. Chlorhexidine+iodine and chlorhexidine+iodine+alcohol skin preps have not been shown to reduce the infection rate, but rates of their use are also reported in the table below.

<table>
<thead>
<tr>
<th></th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of procedures</td>
<td>527</td>
<td>9019</td>
</tr>
<tr>
<td>Rate of chlorhexidine or</td>
<td>89%</td>
<td>87%</td>
</tr>
<tr>
<td>chlorhexidine+alcohol skin prep</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rate of chlorhexidine+iodine or chlorhexidine+iodine+alcohol prep</td>
<td>3%</td>
<td>4%</td>
</tr>
<tr>
<td>Rate of in-hospital surgical-site infection</td>
<td>2%</td>
<td>3%</td>
</tr>
</tbody>
</table>
Percentage With Chlorhexidine or Chlorhexidine+Alcohol Skin Prep in Your Region (2016-May 2017)

- Other centers in your region
- Your center

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

Percentage With Chlorhexidine or Chlorhexidine+Alcohol Skin Prep by Region (2016-May 2017)

"Others" indicates centers that do not belong to a regional group. **Indicates region’s rate differs significantly from the VQI rate."
Infrainguinal Bypass: Rate of Major Complications
(Jan. 1, 2016-May 31, 2017)
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. 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>309</td>
<td>5272</td>
</tr>
<tr>
<td>Percentage with major complications after INFRA</td>
<td>5.5%</td>
<td>4.2%</td>
</tr>
</tbody>
</table>
**Rate of Major Complications After INFRA in Your Region (2016-May 2017)**

- **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 Major Complications After INFRA by Region Across VQI (2016-May 2017)**

- So Cal.
- Nor Cal.
- Mid America
- G. Lakes
- Mid South
- Carolinas
- Rocky Mtn.
- Midwest
- Southwest
- New Enland
- VQI
- Southeast
- Mid Atlantic
- Others
- Michigan
- New York
- SOVONET®
- Pacific NW

**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 (2016)
Excludes patients with permanent filters and patients who have died since discharge

<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>1294</td>
</tr>
<tr>
<td>Percentage with filter retrieval, or attempt at retrieval</td>
<td>0%</td>
<td>30%</td>
</tr>
<tr>
<td>Percentage not retrieved because not clinically indicated</td>
<td>NA</td>
<td>NA%</td>
</tr>
<tr>
<td>Percentage not retrieved because patient declined</td>
<td>NA</td>
<td>NA%</td>
</tr>
</tbody>
</table>
Rate of IVCF Retrieval 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 IVCF Retrieval by Region Across VQI (2016)

- Southeast
- Virginia
- Midwest
- VQI
- C. Lakes
- New York

“Others” indicates centers that do not belong to a regional group. *** indicates region’s rate differs significantly from the VQI rate.
Non-Ruptured Open AAA: In-Hospital Mortality
(Jan. 1, 2016-May 31, 2017)
Excludes ruptured aneurysms
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>40</td>
<td>1433</td>
<td></td>
</tr>
<tr>
<td>Observed rate of in-hospital death among procedures meeting inclusion criteria</td>
<td>5%</td>
<td>3.6%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>38</td>
<td>1343</td>
<td></td>
</tr>
<tr>
<td>Observed rate of in-hospital death among cases with complete data</td>
<td>5.3%</td>
<td>3.5%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of in-hospital death among cases with complete data*</td>
<td>2.9%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.3</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Observed rate of in-hospital death among procedures with infrarenal proximal clamp</td>
<td>4.2%</td>
<td>2.6%</td>
<td></td>
</tr>
<tr>
<td>Observed rate of in-hospital death among procedures with suprarenal proximal clamp</td>
<td>6.2%</td>
<td>4.5%</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.
"Others" indicates centers that do not belong to a regional group. "***" indicates region’s observed rate differs significantly from its expected rate.

Excludes ruptured aneurysms and in-hospital deaths with LOS<=8 days

<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>39</td>
<td>1399</td>
<td></td>
</tr>
<tr>
<td>Observed median LOS among procedures meeting inclusion criteria</td>
<td>8</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>37</td>
<td>1300</td>
<td></td>
</tr>
<tr>
<td>Observed median LOS among cases with complete data</td>
<td>8</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Expected median LOS among cases with complete data*</td>
<td>7.5</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected medians</td>
<td>0.66</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Observed median LOS among cases involving infrarenal proximal clamp</td>
<td>8</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Observed median LOS among cases involving suprarenal proximal clamp</td>
<td>8</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

*"Expected median" is the median LOS estimated by a statistical model that accounts for patient characteristics, including age, gender, race, BMI, comorbidities, concomitant procedures, medication and stroke and vascular history. "Cases with complete data" include patients who have data on all of those factors.
OAAA: Median LOS by Region Across VQI (2016-May 2017)

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

<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>2484</td>
<td>31443</td>
</tr>
<tr>
<td>Rate of ultrasound access guidance</td>
<td>88%</td>
<td>69%</td>
</tr>
<tr>
<td>Rate of any hematoma (minor, moderate or major)</td>
<td>2.3%</td>
<td>2.6%</td>
</tr>
<tr>
<td>Rate of moderate or major hematoma</td>
<td>0.5%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Rate of US guidance among cases with closure device</td>
<td>90%</td>
<td>71%</td>
</tr>
<tr>
<td>Rate of US guidance among cases without closure device</td>
<td>73%</td>
<td>60%</td>
</tr>
</tbody>
</table>
Rate of Ultrasound Access Guidance in Your Region (2016-May 2017)

- Other centers in your region
- Your center

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

Rate of Ultrasound Access Guidance by Region Across VQI (2016-May 2017)

- Others” indicates centers that do not belong to a regional group. **Indicates region’s rate differs significantly from the VQI rate.
PVI: Percentage of Claudicants With ABI or TBI Reported Before Procedure
(Jan. 1, 2016-May 31, 2017)

“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.

<table>
<thead>
<tr>
<th></th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of PVI procedures with indication of claudication</td>
<td>1075</td>
<td>14336</td>
</tr>
<tr>
<td>Percentage with ABI/TBI recorded before procedure</td>
<td>73%</td>
<td>78%</td>
</tr>
</tbody>
</table>
Rate of ABI/TBI Assessment Before PVI in Your Region (2016-May 2017)

- 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-May 2017)

- Midsouth
- Midwest
- Southeast
- New York
- Carolinas
- Rocky Mtn.
- Mid-Atlantic
- Up.
- Midwest
- VQI
- So. Cal.
- Canada
- SE VQI
- N. England
- Virginia
- Mid-America
- Nor. Cal.
- Q. Lakes
- 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 (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 in side of operation.
VQI Presentations

1) “Experience and outcomes with TCAR Procedures at SBU”  
   Angela Kokkosis MD

2) VQI Influence on Quality Improvement:  
   What VQI Can Do for You  
   Roger Walcott MD

3) QI project for transfusion with  
   TEVAR and LE bypass  
   Sikander Khan MD

4) VQI Discharge Medications  
   Review and Analysis  
   Glen Jacobowitz MD
   Matt Cambria DM
TCAR:
TransCarotid Artery Revascularization

Angela A. Kokkosis, MD, FACS
Assistant Professor of Surgery
Director of Carotid Interventions
Division of Vascular & Endovascular Surgery
Stony Brook University Medical Center
TCAR Procedure

Direct Carotid Access

Transcarotid Arterial Sheath

Arteriovenous Shunt

Flow Controller with Filter

Venous Return Sheath

Stony Brook Medicine
Stony Brook’s Experience

• October 2016-September 2017
• **32 high risk patients** (23 male and 9 female)
  - 30 asymptomatic, 2 symptomatic
  - Age of 75 years (61-86)
  - Carotid stenosis 87.1% (60-95)
  - Duplex PSV of 489.6cm/s (278-805cm/s)
  - Duplex EDV of 130.3cm/s (42-314cm/s)
  - VSG-CRI risk score was 6.6 (3–10) 6-7% risk of adverse cardiac events
• Wallert life expectancy was medium risk for, denoting an 80% 5-year survival
Stony Brook’s Experience

- No perioperative complications
- Mean LOS 1.1 days
- All patients completed their 1-month follow-up.
  - All patients had patent carotid stents with no neurologic deficits
Case: 62yo M symptomatic with amaurosis fugax and >90% occlusion
Case: 62yo M with >90% recurrent stenosis, asymptomatic
VQI Influence on Quality Improvement: What VQI Can Do For You

Roger Walcott, MD
Assistant Medical Director
Vascular Surgery
Catholic Health System, Buffalo, NY
Improved Compliance

Percentage With Chlorhexidine or Chlorhexidine+Alcohol Skin Prep by Year

- Your Center
- Your region
- VQI Overall

Percentage With Chlorhexidine or Chlorhexidine+Alcohol Skin Prep in Your Region (2016-May 2017)

Other centers in your region
Your center

Centers (centers with <10 cases not shown)

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

<table>
<thead>
<tr>
<th>SOCH MSC VQI Procedure Volumes</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>YTD 2017 (July)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>CEA</td>
<td>123</td>
<td>91</td>
<td>136</td>
<td>59</td>
</tr>
<tr>
<td>HD Access</td>
<td>74</td>
<td>45</td>
<td>27</td>
<td>13</td>
</tr>
<tr>
<td>Infra Bypass</td>
<td>109</td>
<td>99</td>
<td>93</td>
<td>58</td>
</tr>
<tr>
<td>Supra Bypass</td>
<td>47</td>
<td>28</td>
<td>32</td>
<td>13</td>
</tr>
<tr>
<td>EVAR</td>
<td>81</td>
<td>75</td>
<td>70</td>
<td>29</td>
</tr>
<tr>
<td>Open AAA</td>
<td>10</td>
<td>10</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>TEVAR</td>
<td>4</td>
<td>4</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>PVI</td>
<td>317</td>
<td>279</td>
<td>283</td>
<td>175</td>
</tr>
</tbody>
</table>

766  633  664  352  *represents VQI inclusion cases/not total volume

<table>
<thead>
<tr>
<th>Infections</th>
<th>30</th>
<th>33</th>
<th>18</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>3.9%</td>
<td>5.2%</td>
<td>2.7%</td>
<td>3.1%</td>
</tr>
</tbody>
</table>
Method

- Compliance of CHG prep
- Pre and post CHG baths
- Nasal antiseptics
- Collaboration with ID team
Improving quality using VQI and QI tools: Perioperative blood transfusions

Sikandar Khan, Brittany Montross, Marcie Cortez, Maciej Dryjski, Linda Harris, Gregory Cherr.

SUNY at Buffalo, Buffalo, NY, USA.
VA Western NY Healthcare System, NY, USA.

Division of Vascular Surgery
Financial disclosures

- NONE
<table>
<thead>
<tr>
<th>Procedure</th>
<th>Total number of cases</th>
<th>Number of patients with Transfusion ≥ 3units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suprainguinal bypass</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Infrainguinal bypass</td>
<td>29</td>
<td>6</td>
</tr>
<tr>
<td>EVAR</td>
<td>36</td>
<td>0</td>
</tr>
<tr>
<td>TEVAR</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>CEA</td>
<td>62</td>
<td>0</td>
</tr>
<tr>
<td>PVI</td>
<td>162</td>
<td>0</td>
</tr>
</tbody>
</table>
### VQI mid 2017 review (Jan-June)

<table>
<thead>
<tr>
<th>Transfusions</th>
<th>KH</th>
<th>Regional</th>
<th>National</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEVAR</td>
<td>2.2±3</td>
<td>1.2±2.6</td>
<td>1.5±3.4</td>
</tr>
<tr>
<td>Infrainguinal bypass</td>
<td>1.5±2.8</td>
<td>0.7±1.6</td>
<td>0.8±2</td>
</tr>
</tbody>
</table>
Breakup of transfusions according to sites/service

- **INTRAOP/ANESTHESIA**: 12 (LE Bypass 7, TEVAR 7)
- **ICU**: 11 (LE Bypass 4, TEVAR 7)
- **VASCULAR**: 15 (LE Bypass 9, TEVAR 6)
- **OTHER SERVICE**: 2 (LE Bypass 2, TEVAR 1)
Intraoperative Transfusions

Number of Transfusions

EBL >1000
EBL >500
EBL <500

LE Bypass
TEVAR

2 1 2
3 4 6
Post operative Transfusions

- **HB <=7**: 5 Hypotensive Vasopressor
- **HB <9, CAD**: 4 Hypotensive Vasopressor, 9 ACS/NSTEMI/STEMI
- **HB >7**: 10 Hypotensive Vasopressors, 1 Vasopressor
Lower Extremity Bypass Transfusions

Number transfusions per Case

- Kaleida Health
- Regional
- National

JAN  FEB  MAR  APR  MAY  JUN  JULY  AUG  SEPT  OCT  NOV  DEC
Inter-disciplinary approach

- Anesthesia
- ICU
- Nursing
- Cardiology
Future steps

- Documentation of indication for transfusion
- Standardize measurement of EBL
- Use cell saver in OR
- Use of crystalloid/volume expanders
- Set clear standardized indications for transfusions
Thank-you
VQI Discharge Medications: Review and Analysis

Matthew Cambria
Division of Vascular and Endovascular Surgery

NYU Langone Health
NYU Langone Medical Center
10/05/2017
Post Operative Medications – VQI policy and our experience

• NYU cited as having a low overall rate of prescribing these drugs at the VQI national meeting 6/2016 relative to our regional study group.
  • Most providers allowed PCPs to make medication decisions

• Our NP then instructed to ensure our patients were prescribed statin/antiplatelet on discharge whenever possible

• VQI mandates input of medications (ASA, Statin, P2y12 inhibitor, Beta Blocker, ACE/ARB, Chronic Anticoagulant) for arterial modules at…
  • Pre-op
  • Post-op
  • Follow-Up

• Standards of care across all arterial procedures:
  • Perioperative mgmt with antiplatelet & statin medication is associated with reduced mortality following vascular surgery.¹
Regarding Endarterectomy…

• Our division is particularly interested in how these medications affect outcomes for patients receiving Carotid repairs.

• There is a paucity of high-quality evidence regarding what constitutes "optimal medical therapy" for the purposes of reducing morbidity/mortality after carotid endarterectomy (CEA).²

• Statin … rationale … that they will reduce perioperative myocardial infarction and stroke (especially in symptomatic patients), as well as reduce recurrent cerebral events before CEA.³

• Long-term atherosclerotic adverse events are anticipated in patients undergoing carotid endarterectomy… Statins confer a significant protective effect for stroke and death.⁴

• The great power of the VQI/VSGGNY portal is in answering the question…

  What do the numbers indicate?
## CAE – Statin/Antiplatelet & Total Complications
### 01/01/2013 through 12/31/2015

<table>
<thead>
<tr>
<th>Procedure Variable Name</th>
<th>My Center Results (N=163)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge Statin and antiplatelet agents prescribed</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>17.8% (29)</td>
</tr>
<tr>
<td>Yes</td>
<td>82.2% (134)</td>
</tr>
<tr>
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<td>0.0% (0)</td>
</tr>
<tr>
<td>Post-Op Complications</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>96.9% (158)</td>
</tr>
<tr>
<td>Yes</td>
<td>3.1% (5)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.0% (0)</td>
</tr>
</tbody>
</table>
NYU CAE 2013-2015

82.2% prescription rate
3.1% total compx rate

Performed well; at national average, above regional average of prescription rate (see image 1).

In the lower 1/3 of national participants re: post operative complications (see image 2).

What happens when we break down rates by certain types of complications…
CAE 2013-2015
Stroke/Death Rate: 0%
N=162
*Excludes symptomatic and emergent admissions, and patients with prior CEA in surgery side

In-hospital Stroke or Death after Primary Isolated Elective CEA

My Center Results (N=162)  All Other Regional Participants (N=1,344)  All Other National Participants (N=34,502)

<table>
<thead>
<tr>
<th>Procedure Variable Name</th>
<th>My Center Results (N=162)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expected Stroke or Death Rate</td>
<td>0.6%</td>
</tr>
<tr>
<td>Observed Stroke or Death Rate</td>
<td>0.0% ***</td>
</tr>
<tr>
<td>Discharge Statin and antiplatelet agents prescribed</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>17.9% (29)</td>
</tr>
<tr>
<td>Yes</td>
<td>82.1% (133)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.0% (0)</td>
</tr>
</tbody>
</table>
## Cardiac Events: post op.

- **Statin & AntiPl.: 82.2%**
- **Dysrhythmia: 0%**
- **MI: 0.6%**
- **CHF: 0%**

<table>
<thead>
<tr>
<th>Procedure Variable Name</th>
<th>My Center Results (N=163)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHF</td>
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<tr>
<td>No</td>
<td>100.0% (163)</td>
</tr>
<tr>
<td>Yes</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Dysrhythmia (new)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>100.0% (163)</td>
</tr>
<tr>
<td>Yes</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Myocardial Infarction</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>99.4% (162)</td>
</tr>
<tr>
<td>Troponin only</td>
<td>0.5% (1)</td>
</tr>
<tr>
<td>EKG or clinical</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.0% (0)</td>
</tr>
</tbody>
</table>
### New Events: follow-up (anywhere from 0-21 months)

- **Statin & AntiPl.: 74.8%**
- **Neuro. (stroke or TIA): 1.3%**
- **Cardiac (MI): 0.6%**

<table>
<thead>
<tr>
<th>Procedure Variable Name</th>
<th>My Center Results (N=163)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Follow Up statin and antiplatelets</strong></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>22.7% (37)</td>
</tr>
<tr>
<td>Yes</td>
<td>74.8% (122)</td>
</tr>
<tr>
<td><strong>Missing Value or N/A</strong></td>
<td>2.5% (4)</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Follow-Up Variable Name</th>
<th>My Center Results (N=160)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F/U MI Since DC</strong></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>98.8% (158)</td>
</tr>
<tr>
<td>Troponin only</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>EKG or clinical</td>
<td>0.0% (1)</td>
</tr>
<tr>
<td><strong>Missing Value or N/A</strong></td>
<td>0.6% (1)</td>
</tr>
</tbody>
</table>

| **F/U Neurological Event Since DC** |                           |
| No                                  | 97.5% (156)               |
| Yes                                 | 1.3% (2)                  |
| **Missing Value or N/A**            | 1.3% (2)                  |
## CAE – Statin/Antiplatelet & Total Complications
### 01/01/2016 through 09/29/2017

<table>
<thead>
<tr>
<th>Procedure Variable Name</th>
<th>My Center Results (N=151)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge Statin and antiplatelet agents prescribed</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>14.6% (22)</td>
</tr>
<tr>
<td>Yes</td>
<td>85.4% (129)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Any Post-op Complication</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>96.0% (145)</td>
</tr>
<tr>
<td>Yes</td>
<td>4.0% (6)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.0% (0)</td>
</tr>
</tbody>
</table>
85.4% prescription rate
4.0% total compx rate

Performed well; national average, regional average and local percentage of prescriptions equal (see image 1).

In the lower 1/3 of national participants re: post operative complications (see image 2). Almost 2% lower than our regional average (5.7%)

Complications broken down by system…
CAE 2016-2017
Stroke/Death Rate: 0.7%
N=150

*Excludes symptomatic and emergent admissions, and patients with prior CEA in surgery side

Stroke/Death Rate: 0.7%
N=150

Excludes symptomatic and emergent admissions, and patients with prior CEA in surgery side

<table>
<thead>
<tr>
<th>Procedure Variable Name</th>
<th>My Center Results (N=150)</th>
</tr>
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<tbody>
<tr>
<td>Expected Stroke or Death Rate</td>
<td>0.5%</td>
</tr>
<tr>
<td>Observed Stroke or Death Rate</td>
<td>0.7% **</td>
</tr>
<tr>
<td>Discharge Statin and antiplatelet agents prescribed</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>14.0% (21)</td>
</tr>
<tr>
<td>Yes</td>
<td>86.0% (129)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.0% (0)</td>
</tr>
</tbody>
</table>
## Cardiac Events: post op.

- **Statin & AntiPl.: 85.4%**
- **Dysrhythmia: 3.3%**
- **MI: 0%**
- **CHF: 0%**

<table>
<thead>
<tr>
<th>Procedure Variable Name</th>
<th>My Center Results (N=151)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHF</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>100.0% (151)</td>
</tr>
<tr>
<td>Yes</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Dysrhythmia (new)</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>96.7% (146)</td>
</tr>
<tr>
<td>Yes</td>
<td>3.3% (5)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Myocardial Infarction</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>100.0% (151)</td>
</tr>
<tr>
<td>Troponin only</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>EKG or clinical</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.0% (0)</td>
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</tbody>
</table>
# New Events: follow-up (anywhere from 0-21 months)

<table>
<thead>
<tr>
<th>Procedure Variable Name</th>
<th>My Center Results (N=151)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow Up statin and antplatelets</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>6.0% (9)</td>
</tr>
<tr>
<td>Yes</td>
<td>24.5% (37)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>69.5% (105)</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Follow-Up Variable Name</th>
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</thead>
<tbody>
<tr>
<td>F/U MI Since DC</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>100.0% (46)</td>
</tr>
<tr>
<td>Troponin only</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>EKG or clinical</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.0% (0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F/U Neurological Event Since DC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>97.8% (45)</td>
</tr>
<tr>
<td>Yes</td>
<td>2.2% (1)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.0% (0)</td>
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</table>

- Statin & AntiPl.: **24.5%**
- Neuro. (stroke or TIA): **2.2%**
- Cardiac (MI): **0%**
For CAE, no correlation between medications and complications during index hospitalization

**CAE 2013, 2014, & 2015**

82.4% meds  
3.5% compx

<table>
<thead>
<tr>
<th>Procedure Variable Name</th>
<th>My Center Results (N=170)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge Statin and antiplatelet agents prescribed</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>17.6% (30)</td>
</tr>
<tr>
<td>Yes</td>
<td>82.4% (140)</td>
</tr>
<tr>
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<td>0.0% (0)</td>
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</table>

<table>
<thead>
<tr>
<th>Procedure Variable Name</th>
<th>My Center Results (N=324)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge Statin and antiplatelet agents prescribed</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>16.0% (52)</td>
</tr>
<tr>
<td>Yes</td>
<td>84.0% (272)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.0% (0)</td>
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</tbody>
</table>

**CAE 2016 & 2017**

84% meds  
3.7% compx

<table>
<thead>
<tr>
<th>Procedure Variable Name</th>
<th>My Center Results (N=324)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge Statin and antiplatelet agents prescribed</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>16.0% (52)</td>
</tr>
<tr>
<td>Yes</td>
<td>84.0% (272)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.0% (0)</td>
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</table>

<table>
<thead>
<tr>
<th>Procedure Variable Name</th>
<th>My Center Results (N=324)</th>
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<tbody>
<tr>
<td>Discharge Statin and antiplatelet agents prescribed</td>
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<tr>
<td>No</td>
<td>16.0% (52)</td>
</tr>
<tr>
<td>Yes</td>
<td>84.0% (272)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.0% (0)</td>
</tr>
</tbody>
</table>
For all other procedures:

- Look at complication rates – in hospital and follow up – for arterial modules
  - Particularly interested cardiac (MI) events.
  - Patients on statin/antiplateletes vs. those that are not on both

- PVI represents so much of our center’s volume
  - “Patients with symptomatic PAD, but without an antecedent cardiovascular history, are less likely to be optimally managed with statins and antiplatelet therapy preoperatively. Given the established role of these medications in the optimal medical management of patients with PAD, this presents an opportunity for improvement in the overall vascular care of patients undergoing intervention for symptomatic PAD at VSGGNY centers.”5
# CAS, EVAR, TEVAR, LE Bypass during index hospitalization

## 2013, 2014, & 2015

<table>
<thead>
<tr>
<th>Procedure Variable Name</th>
<th>My Center Results (N=264)</th>
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</thead>
<tbody>
<tr>
<td>Discharge Statin and antiplatelet agents prescribed</td>
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<tr>
<td>No</td>
<td>26.0% (71)</td>
</tr>
<tr>
<td>Yes</td>
<td>69.7% (184)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>3.4% (9)</td>
</tr>
<tr>
<td>Any Post-op Complication</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>73.6% (194)</td>
</tr>
<tr>
<td>Yes</td>
<td>25.1% (69)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.4% (1)</td>
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<table>
<thead>
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<tbody>
<tr>
<td>Discharge Statin and antiplatelet agents prescribed</td>
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<td>24.0% (46)</td>
</tr>
<tr>
<td>Yes</td>
<td>75.5% (145)</td>
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<td>0.5% (1)</td>
</tr>
<tr>
<td>Any Post-op Complication</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>77.5% (149)</td>
</tr>
<tr>
<td>Yes</td>
<td>22.4% (43)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.0% (0)</td>
</tr>
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</table>

## 2016 & 2017

69.7% meds  
26.1% compx
For PVI...

### 2013, 2014, & 2015

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<th>Procedure Variable Name</th>
<th>My Center Results (N=585)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Post-op Complication</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>3.6% (21)</td>
</tr>
<tr>
<td>Yes</td>
<td>0.5% (3)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>95.9% (561)</td>
</tr>
<tr>
<td>Discharge statin and antiplatelets for PVI</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>67.2% (393)</td>
</tr>
<tr>
<td>Yes</td>
<td>32.3% (189)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.5% (3)</td>
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</table>

### 2016 & 2017

<table>
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</thead>
<tbody>
<tr>
<td>Any Post-op Complication</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>56.8% (322)</td>
</tr>
<tr>
<td>Yes</td>
<td>4.1% (23)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>39.2% (222)</td>
</tr>
<tr>
<td>Discharge statin and antiplatelets for PVI</td>
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</tr>
<tr>
<td>No</td>
<td>71.6% (406)</td>
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<tr>
<td>Yes</td>
<td>28.0% (159)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.4% (2)</td>
</tr>
</tbody>
</table>
Problems with peripheral patients…

• Numbers would indicate that our prescription policy needs to change

However…

• PVI data mapping in 9/2017 changed over all old forms to the new format…old forms didn’t have ability to filter by “any complication”
  • Skews total complication rate

• Clinically, large numbers of these patients seen outside of the hospital (outpatient surgical facility)…medications aren’t changed when leaving Advanced Vascular Center
  • no NP oversight

• From data mgmt perspective, PVI should be incorporated into “user calculated variable” in the analytics engine.
Bibliography


Arterial Quality Council Update: Darren Schneider, MD
• Clarify clinical issues for national QI initiatives, e.g., range of dates for EVAR LTFU (9 – 21 months)
• AQC members collaborating with SVS committee on appropriateness definitions, role of VQI and other specialties, links to reimbursement.
• VQI registry chairs submitted lists of essential variables for each registry.
• Maine Medical Center dashboard used as a guide
• Dan Neal will lead initiative to build center dashboards using essential variables
• Bi-annual dashboards planned for 2018; quarterly issuance for high volume registries TBD.
Venous Quality Council Update
Krish Soundararajah, MD
Venous Stent Registry: release 2018

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

Industry and FDA Collaboration:
Bard, Cook, Gore, Medtronic, Veniti
Research Advisory Council Update
Glenn Jacobowitz, MD
Check Approved Project List:


To submit a proposal to be considered for the National RAC, please follow the link below:

http://abstracts123.com/svs1/meetinglogin
## Recent Approved studies

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Title</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>Alfio Carroccio, MD</td>
<td>NSHS</td>
<td>IVC filter thrombosis in obesity</td>
<td>Dec-16</td>
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<tr>
<td>Alfio Carroccio, MD</td>
<td>NSHS</td>
<td>Patency of Forearm Arteriovenous Fistulas in Octogenarians</td>
<td>Dec-16</td>
</tr>
<tr>
<td>Vincent Rowe, MD</td>
<td>USC</td>
<td>The effect of ACE inhibitors and ARBs on outcomes of lower extremity bypass</td>
<td>Dec-16</td>
</tr>
<tr>
<td>William Robinson, MD</td>
<td>UMass</td>
<td>The Utilization of Novel Anticoagulants After Infracuinal Bypass and Impact on Outcomes In the VQI</td>
<td>Dec-16</td>
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<tr>
<td>Mahmoud Malas, MD</td>
<td>John-Hopkins</td>
<td>Determinants of Same-Day, Early versus Late Discharge and The effect of Discharge Patterns on Mortality and Readmission Following Elective EVAR</td>
<td>Dec-16</td>
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<tr>
<td>Jessica Simons, MD</td>
<td>UMASS</td>
<td>Practice Patterns of Atherectomy</td>
<td>Dec-16</td>
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<tr>
<td>Faisal Aziz, MD</td>
<td>Penn State</td>
<td>Impact of a Center's Volume of Ruptured Infrarenal Aortic Aneurysm Surgery on the Outcomes of Ruptured Infrarenal Aortic Aneursyms</td>
<td>Dec-16</td>
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<tr>
<td>Jeffrey Siracuse, MD</td>
<td>BMC</td>
<td>EVAR in dialysis patients</td>
<td>Dec-16</td>
</tr>
<tr>
<td>Jeffrey Siracuse, MD</td>
<td>BMC</td>
<td>Retrograde popliteal approach for recanalization of superficial femoral artery</td>
<td>Dec-16</td>
</tr>
<tr>
<td>Thomas Maldonado, MD</td>
<td>NYU</td>
<td>A comparison of the incidence of ischemic complications between FEVAR and standard EVAR</td>
<td>Dec-16</td>
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<tr>
<td>Nicole Kennedy, MD</td>
<td>Henry Ford</td>
<td>The incidence of EHIT in the Era of Endovenous Ablation Technology</td>
<td>Feb-17</td>
</tr>
<tr>
<td>Michael Sgroi, MD</td>
<td>Stanford</td>
<td>The effects of the type of anesthesia on perioperative outcomes for infrapnuial bypass</td>
<td>Feb-17</td>
</tr>
</tbody>
</table>
National Research Process

Proposal Submissions

December 2017

- Call for Proposals: October 10, 2017
- Due Date: November 20, 2017
- Meeting: December 11, 2017
- Notifications Sent: December 12, 2017
Regional Research Projects:

• Any new ideas?
Governing Council Update
Apostolos Tassiopoulos, MD
GC meeting at VAM

- Additional Committee members to be added to the PSO Executive Committee to provide representation for the Community Practice and Office-Based Endovascular Center communities.
- Update on the Clinical Indications Committee
- Update on Registry Development for Q3 and Q4 of 2017
  - PVI Mapping
  - CAS Mapping
  - IVC Filter Retrieval
  - Medicine Registry
  - Addition of Required Fields
  - PSO Audit Tools
GC meeting at VAM

– Update on the SVS exploring a Vascular Certification Program

– Possibility of incorporating Dues to support Regional Meetings, directly into Annual Registry Billing Invoice

– GC Approved the New Policy Governing the Release of data sets including identified Device Data
PATHWAYS Development Update
Debbie Macaulay, M2S
Page Is Now Shown As Interactive Report

Page layout includes break function which groups the list of procedure records by status

To access the individual procedure records, click on the procedure date in the Procedure Date column.

A new “Follow-up” column has been added to the table. Incomplete procedures will only show a dash in this column. Complete procedures will display the “Create/View” link to access and create new follow-up records.

Using the Actions button, customize your view and add/remove columns displayed in the tables, save your view, and download the list of procedure records.
### Patient Information

**Last Name:** Test6  **First Name:** TestT  **MI:**  **DOB:** 07/19/1943  **MRN:** 1000001  **SSN:** XXX-XX-XXXX

### Procedure Records

#### Procedure Status : Complete

<table>
<thead>
<tr>
<th>Procedure Date</th>
<th>Procedure</th>
<th>Surgery Side</th>
<th>Physician</th>
<th>Visit Code</th>
<th>Follow-up</th>
<th>PROs Collection</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/29/2009</td>
<td>Carotid Endarterectomy</td>
<td>Left</td>
<td>F43 L43</td>
<td>0001</td>
<td>Create/View</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>09/19/2011</td>
<td>Carotid Endarterectomy</td>
<td>Right</td>
<td>F43 L43</td>
<td>0001</td>
<td>Create/View</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

#### Procedure Status : Incomplete

<table>
<thead>
<tr>
<th>Procedure Date</th>
<th>Procedure</th>
<th>Surgery Side</th>
<th>Physician</th>
<th>Visit Code</th>
<th>Follow-up</th>
<th>PROs Collection</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>06/06/2017</td>
<td>Carotid Artery Stent [new]</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Both scheduled for Q3

Once mapping is complete, access to the old forms will be removed. Data collected in the VQI which had been captured on the former version of the form will be converted to the new version.

Incomplete procedures that have been started on the old form, and are still incomplete at the time of the release, will be mapped to the new forms and require completion of the new data fields for successful submission.
• VQI is a 2017 Approved QCDR
  – 29 Quality Measures across the VQI registries

• If you, or your individual physicians, would like to participate in
  the 2017 Merit-based Incentive Payment System (MIPS)
  through the VQI QCDR, contact PATHWAYSSupport@m2s.com
TEVAR Dissection Post-market Surveillance

- **Sponsors:** Medtronic and W.L. Gore
- **Sites** have received $942,800 as of 6/30/2017 as compensation for their time.
- **FDA** has received 4 summary reports (non-identifiable data)
- **Publications:**
  - Innovative postmarket device evaluation using a quality registry to monitor thoracic endovascular aortic repair in the treatment of aortic dissection. JVS 2017
  - Thirty-Day Outcomes from The Society for Vascular Surgery Vascular Quality Initiative (SVS VQI) TEVAR for Type B Dissection Project. 2017 Vascular Annual Meeting

<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 (397 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>No</td>
<td>Up to 50</td>
<td>200 (192 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>
Sponsor: Lombard Medical

EVAR Registry

Sites have received $94,700 as of 6/30/2017 as compensation for their time.

Lombard has received 6 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>
</table>
| Yes       | 50              | 234 (40 patients enrolled) | At 30 days and annually for 5 years | Per Subject: $4,000  
- $1300 Initial Treatment  
- $400 Each follow up visits  
- $700 Final 5 year follow up  
$700 Add’l intervention |
Post-market Surveillance

- 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>
</table>
| **Yes**   | 50 (18 patients enrolled) | 300 (7 patients enrolled) | At 12, 24 and 36 Months | **Per Subject: $1,950**
- $350 Initial Treatment
- $500 1 and 2 year FU visits
- $600 Final 3 year FU visit |
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>
<tbody>
<tr>
<td>Yes</td>
<td>Up to 30 (9 currently enrolled)</td>
<td>74 (3 currently enrolled)</td>
<td>12 months and 24 months</td>
<td>Per Subject: $1400  - $400 Initial Treatment  - $500 Each follow up visits  - $400 Additional TLR or TVR intervention</td>
</tr>
</tbody>
</table>
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

• Newly enhanced VQI CAS Registry!

• Enter TCAR case using FDA approved stent/flow-reversal into Registry, submit Medicare claim using NCT 02850588
CREST 2 Registry Project

- CAS Registry with Supplemental 1-page form
- Enrolling
- 97 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 49 reports
  - Patient-level data is non-identifiable per HIPAA
  - Physician and center names are transferred IAW project data sharing agreement
Top two VQI papers

- Slide placeholder (list sent to all regional leaders 7/17)

- Make assignments for Fall 2017 and Spring 2018
Next Meeting

• Agree Next Meeting Dates/Location