Agenda:

I. Welcome and Introduction
   Tej Singh, MD

II. Follow up on Spring meeting
   Carrie Bosela

III. National VQI Update
     Tej Singh, MD

IV. Regional Data Review
    Carrie Bosela

V. Quality Improvement Project Discussion

VI. AQC Update
    Ed Aboian, MD

VII. VQC Update
     Nasim Hedayati, MD

VIII. RAC Update
     Matthew Mell, MD

IX. Governing Council Committee Update
    Tej Singh, MD

X. M2S: Development Update
    Anne Parker

XI. Expanding Participation

XII. Next Meeting and Adjourn
Welcome and Introductions

El Camino Hospital
Marin General Hospital
Palo Alto Medical Foundation
Sequoia Hospital
Stanford Hospital & Clinics
UC Davis Health System
UCSF Medical Center
Washington Hospital Health System
Top Ten Potential Members

• From M2S
Action Items from Last Meeting

• Project Ideas for the regional group:. Ideas included:
  – Procedure volume for fistulas; difficulties in obtaining good LTFU data
  – PVI patients – patency, outcomes, smoking
  – Traditional surgery vs. peripheral vascular procedures and rate of repeat procedures.

• SoCAL and NorCAL Spring Meeting 2018?
• UC Davis: Open AAA juxtarenal criteria?
• Vote to unblind LTFU report
National VQI Update:
Carrie Bosela, SVS PSO
Number of Participating Centers

Location of VQI Participating Centers

437 Centers, 46 States + Canada
18 Regional Quality Groups
Total Procedures Captured (as of 9/1/2017) 407,627

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peripheral Vascular Intervention</td>
<td>129,169</td>
</tr>
<tr>
<td>Carotid Endarterectomy</td>
<td>88,534</td>
</tr>
<tr>
<td>Infra-Inguinal Bypass</td>
<td>39,850</td>
</tr>
<tr>
<td>Endovascular AAA Repair</td>
<td>35,519</td>
</tr>
<tr>
<td>Hemodialysis Access</td>
<td>33,755</td>
</tr>
<tr>
<td>Carotid Artery Stent</td>
<td>16,816</td>
</tr>
<tr>
<td>Varicose Vein</td>
<td>14,412</td>
</tr>
<tr>
<td>Supra-Inguinal Bypass</td>
<td>13,364</td>
</tr>
<tr>
<td>Open AAA Repair</td>
<td>9,994</td>
</tr>
<tr>
<td>Thoracic and Complex EVAR</td>
<td>9,530</td>
</tr>
<tr>
<td>IVC Filter</td>
<td>8,345</td>
</tr>
<tr>
<td>Lower Extremity Amputations</td>
<td>8,339</td>
</tr>
</tbody>
</table>

VQI Total Procedure Volume

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


NCVSG Menu

- Northern California Vascular Study Group
- About Us
- NCVSG Bylaws
- NCVSG Events
- NCVSG Data Reports
- NCVSG Data Elements
- NCVSG Data Management
- VQI Risk Models
- VQI Data Entry Portal

Northern California Vascular Study Group

Join our Northern California Vascular Study Group peers in the VQI.

We are a group of hospitals and vascular specialists in Northern California 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 comes 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 Northern California, we would be delighted to talk with you about joining the NCVSG.

I would be happy to hear from you by email at pamfvascular@gmail.com.

Dr. Tej M. Singh, MD, MBA
Regional Group Leader and Medical Director, Northern California Vascular Study Group
Chief Vascular Surgery, Palo Alto Medical Foundation
Director, Mitchell Vascular Center, Palo Alto Medical Foundation
Vascular Director, El Camino Hospital

For questions on NCVSG administration or data management, please contact your Regional DM Leads:

Marsha McRorie at marsha.mcrovie@elcaminohospital.org
Joyce Nacario at joyce.nacario@ucsf.edu

NCVSG News and Events

NCVSG Fall Meeting 2017 - SAVE THE DATE
Date: September 30, 2017
Time: 8:00am - 12 noon
Place: Mills Peninsula Medical Center, Burlingame, CA
(Data Managers’ Meeting: Sept. 29th, 1:00pm - 5:00pm)

See the links below for the Minutes for the Spring Meeting:
NCVSG Spring Meeting - Survey
NCVSG Spring Meeting 2017 Minutes
NCVSG Spring Meeting 2017 Presentations
VQI@VAM 2017 Feedback via On-Site Surveys:

- 50 responses
- Predominantly Data Managers
  - 29 Data Managers
  - 10 Quality staff
  - 5 Other (Informatics, PA etc)
  - 3 Physicians
  - 2 Unclassified
  - 1 Administration
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 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)

• Article highlighting poster winner – *The Right Meds for the Right Outcomes* in August 2017 *Vascular Specialist*. 
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: Available after Aug. 2nd
Recorded webinars 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.
• Medicare Reimbursement, Effect on Practices
• 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

SUBMIT SOMETHING
• One Measure
• One Activity

SUBMIT A PARTIAL YEAR
• Submit 90 days of 2017 data to Medicare

SUBMIT A FULL YEAR

FINANCIAL IMPACT

Avoid a negative payment
You may earn a neutral or small positive payment adjustment
You may earn a moderate payment adjustment

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 & Analytics Engine Advanced  
**December:** Difficult Case Abstraction (TBD)
Participation Award potential changes:

• There will be 4 categories scored, each on a 0-6 point scale:
  o LTFU
  o Meeting attendance
  o QI project involvement
  o 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:

Tej Singh, 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.
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            |                      | [140 | 256 | 512]                  | [55 | 196 | 434]          |
| Multiple (2014-15) | Long-Term Follow-Up         |                      | [62% | 77% | 79%]                  | [43% | 70% | 86%]          |
| Multiple      | Discharge Medications            |                      | [67% | 76% | 81%]                  | [71% | 80% | 87%]          |
| AVACCESS      | Primary AVF vs. Graft            | NA (<3 centers)      |                          | [78% | 85% | 94%]          |
| CEA           | In-Hospital Stroke/Death         |                      | [0% | 0% | 0%]                  | [0% | 0% | 1%]           |
| CEA           | LOS>1 Day                        |                      | [8% | 17% | 24%]                  | [14% | 23% | 33%]          |
| EVAR          | LOS>2 Days                       |                      | [6% | 9% | 11%]                  | [7% | 13% | 21%]          |
| EVAR (2014-15)| Sac Diameter at LTFU            |                      | [55% | 59% | 68%]                  | [31% | 55% | 70%]          |
| INFRA         | Chlorhexidine Skin Prep          |                      | [88% | 97% | 97%]                  | [89% | 98% | 100%]         |
| INFRA         | Major Complications              |                      | [0% | 0% | 1%]                  | [0% | 0% | 6%]           |
| IVCF (2016)   | Filter Retrieval                 | NA (<3 centers)      |                          | [5% | 15% | 46%]          |
| OAAA          | In-Hospital Mortality            |                      |                          | [0% | 0% | 0%]           |
| OAAA          | Median LOS (Days)                |                      | [0% | 0% | 0%]                  | [6 | 7 | 8]            |
| PVI           | Ultrasound Guidance              |                      | [95% | 96% | 97%]                  | [55% | 86% | 97%]          |
| PVI           | ABI/TBI Reported                 |                      | [64% | 82% | 90%]                  | [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>207</td>
</tr>
<tr>
<td>CEA</td>
<td>752</td>
</tr>
<tr>
<td>EVAR</td>
<td>581</td>
</tr>
<tr>
<td>HEMO</td>
<td>NA (&lt;3 centers)</td>
</tr>
<tr>
<td>INFRA</td>
<td>382</td>
</tr>
<tr>
<td>OAAA</td>
<td>90</td>
</tr>
<tr>
<td>PVI</td>
<td>2079</td>
</tr>
<tr>
<td>SUPRA</td>
<td>117</td>
</tr>
<tr>
<td>TEVAR</td>
<td>331</td>
</tr>
<tr>
<td>IVCF</td>
<td>NA (&lt;3 centers)</td>
</tr>
<tr>
<td>Varicose Veins</td>
<td>NA (&lt;3 centers)</td>
</tr>
<tr>
<td>LEAMP</td>
<td>NA (&lt;3 centers)</td>
</tr>
<tr>
<td>Overall</td>
<td>6200</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=72 Physicians)

- Vascular Surgery
- Cardiology
- Radiology
- General Surgery
- None
- Other
- Neurosurgery
- Cardiothoracic Surgery
### 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>NA (&lt;3 centers)</td>
<td>3810 (68%)</td>
</tr>
<tr>
<td>CEA</td>
<td>225 (80%)</td>
<td>22068 (69%)</td>
</tr>
<tr>
<td>EVAR</td>
<td>211 (72%)</td>
<td>8621 (72%)</td>
</tr>
<tr>
<td>HEMO</td>
<td>NA (&lt;3 centers)</td>
<td>9930 (63%)</td>
</tr>
<tr>
<td>INFRA</td>
<td>134 (77%)</td>
<td>8975 (72%)</td>
</tr>
<tr>
<td>OAAA</td>
<td>19 (84%)</td>
<td>2080 (74%)</td>
</tr>
<tr>
<td>PVI</td>
<td>807 (71%)</td>
<td>32111 (68%)</td>
</tr>
<tr>
<td>SUPRA</td>
<td>31 (77%)</td>
<td>3128 (71%)</td>
</tr>
<tr>
<td>TEVAR</td>
<td>86 (63%)</td>
<td>2434 (70%)</td>
</tr>
<tr>
<td>IVCF</td>
<td>NA (&lt;3 centers)</td>
<td>2862 (65%)</td>
</tr>
<tr>
<td>LEAMP</td>
<td>NA (&lt;3 centers)</td>
<td>2717 (69%)</td>
</tr>
<tr>
<td>2014 overall</td>
<td>1216 (75%)</td>
<td>63264 (71%)</td>
</tr>
<tr>
<td>2015 overall</td>
<td>608 (67%)</td>
<td>35472 (65%)</td>
</tr>
</tbody>
</table>
Long-Term Follow-Up by Center in Your Region (2014-June 2015)

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-June 2015)

Others □ VQI □ Mid-America □ Pacific NW □ G. Lakes □ Up Midwest

"Others" indicates centers that do not belong to a regional group. *** indicates region's rate differs significantly from the VQI rate.
Percentage With Long-Term Follow-Up by Year

- Your Center
- Your region
- VQI Overall

Year:
- 2011
- 2012
- 2013
- 2014-June 2015

Percentage:
- 70%
- 60%
- 50%
- 40%
- 30%
- 20%
- 10%
- 0%
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.
Excludes patients with previous access procedure in the same arm (NCSVG did not have at least 3 centers with 10 procedures)
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>209</td>
<td>18430</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td>0.5%</td>
<td>1.2%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>199</td>
<td>17342</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td>0.5%</td>
<td>1.2%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of stroke or death among cases with complete data*</td>
<td>1.3%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.53</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)

- Other centers in your region
- Your center

Centers (centers with <10 cases not shown)

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

Rate of In-Hospital Stroke or Death After CEA by Region Across VQI (2016-May 2017)

- Observed
- Expected


“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></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;1 day among procedures meeting inclusion criteria</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;1 among cases with complete data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expected rate of LOS&gt;1 among cases with complete data*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

"Expected rate" is the rate estimated by a statistical model that accounts for patient characteristics, including age, gender, race, BMI, comorbidities, medication and stroke and vascular history. "Cases with complete data" include patients who have data on all of those factors.
Rate of CEA Patients With LOS >1 Day in Your Region (2016-May 2017)

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

*** 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)

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

“Others” indicates centers that do not belong to a regional group. *** indicates region’s observed rate differs significantly from its expected rate.
Rate of CEA Patients With LOS>1 Day by Year

Your Center  Your region  VQI Overall
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>112</td>
<td>6525</td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;2 days among procedures meeting inclusion criteria</td>
<td>8%</td>
<td>15%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>105</td>
<td>6058</td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;2 among cases with complete data</td>
<td>7%</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>0.03</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

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

“Others” 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>211</td>
<td>8621</td>
</tr>
<tr>
<td>Percentage with sac diameter recorded at follow-up</td>
<td>57%</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)

- Virginia
- 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.
Rate of LTFU Sac Diameter Reporting by Year

Graph showing the rate of LTFU Sac Diameter Reporting from 2011 to 2014-June 30, 2015. The graph compares Your Center, Your region, and VQI Overall.
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>121</td>
<td>9019</td>
</tr>
<tr>
<td>Rate of chlorhexidine or chlorhexidine+alcohol skin prep</td>
<td>94%</td>
<td>87%</td>
</tr>
<tr>
<td>Rate of chlorhexidine+iodine or chlorhexidine+iodine+alcohol prep</td>
<td>6%</td>
<td>4%</td>
</tr>
<tr>
<td>Rate of in-hospital surgical-site infection</td>
<td>1%</td>
<td>3%</td>
</tr>
</tbody>
</table>
Percentage With Chlorhexidine or Chlorhexidine+Alcohol Skin Prep in Your Region (2016-May 2017)

Centers (centers with <10 cases not shown)

*** 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>66</td>
<td>5272</td>
</tr>
<tr>
<td>Percentage with major complications after INFRA</td>
<td>1.5%</td>
<td>4.2%</td>
</tr>
</tbody>
</table>
Rate of Major Complications After INFRA in Your Region (2016-May 2017)

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)

“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>32</td>
<td>1433</td>
<td></td>
</tr>
<tr>
<td>Observed rate of in-hospital death among procedures meeting inclusion criteria</td>
<td>0%</td>
<td>3.6%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>26</td>
<td>1343</td>
<td></td>
</tr>
<tr>
<td>Observed rate of in-hospital death among cases with complete data</td>
<td>0%</td>
<td>3.5%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of in-hospital death among cases with complete data*</td>
<td>3.6%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>1</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Observed rate of in-hospital death among procedures with infrarenal proximal clamp</td>
<td>0%</td>
<td>2.6%</td>
<td></td>
</tr>
<tr>
<td>Observed rate of in-hospital death among procedures with suprarenal proximal clamp</td>
<td>0%</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.
(NCVSG did not have at least 3 centers with 10 procedures)

“Others” indicates centers that do not belong to a regional group. “*” indicates region’s observed rate differs significantly from its expected rate.
OAAA Repair: Observed vs. Expected Median LOS
(Jan. 1, 2016-May 31, 2017)
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>32</td>
<td>32</td>
<td>1399</td>
</tr>
<tr>
<td>Observed median LOS among procedures meeting inclusion criteria</td>
<td>6</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>26</td>
<td>1300</td>
<td></td>
</tr>
<tr>
<td>Observed median LOS among cases with complete data</td>
<td>6</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Expected median LOS among cases with complete data*</td>
<td>7.9</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected medians</td>
<td>0.57</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Observed median LOS among cases involving infrarenal proximal clamp</td>
<td>6</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Observed median LOS among cases involving suprarenal proximal clamp</td>
<td>7</td>
<td>7</td>
<td>7</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.
(NCVSG did not have at least 3 centers with 10 procedures)
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>526</td>
<td>31443</td>
</tr>
<tr>
<td>Rate of ultrasound access guidance</td>
<td>95%</td>
<td>69%</td>
</tr>
<tr>
<td>Rate of any hematoma (minor, moderate or major)</td>
<td>1.9%</td>
<td>2.6%</td>
</tr>
<tr>
<td>Rate of moderate or major hematoma</td>
<td>0.6%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Rate of US guidance among cases with closure device</td>
<td>95%</td>
<td>71%</td>
</tr>
<tr>
<td>Rate of US guidance among cases without closure device</td>
<td>93%</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

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-May 2017)

- Mid-America
- G. Lakes
- SOYONET
- Midwest
- Up. Midwest
- Mid-Atlantic
- Southeast
- VQI
- Carolinas
- New England
- So. Cal
- Virginias
- MidSouth
- New York
- Canada
- Michigan
- Rocky Mtns
- 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 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>250</td>
<td>14336</td>
</tr>
<tr>
<td>Percentage with ABI/TBI recorded before procedure</td>
<td>86%</td>
<td>78%</td>
</tr>
</tbody>
</table>
**Rate of ABI/TBI Assessment Before PVI in Your Region (2016-May 2017)**

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

**Rate of ABI/TBI Assessment Before PVI 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.
Rate of ABI/TBI Assessment Before PVI by Year

- Your Center
- Your region
- VQI Overall
Arterial Quality Council Update: Ed Aboian, 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
Nasim Hedayati, 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
Matthew Mell, 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
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
Tej Singh, 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
Top Five VQI papers 2016

- **Poststent ballooning is associated with increased periprocedural stroke and death rate in carotid artery stenting**

- **Beta-blocker use is associated with lower stroke and death after carotid artery stenting**

- **The Vascular Quality Initiative Cardiac Risk Index for prediction of myocardial infarction after vascular surgery**

- **Endovascular treatment of the common femoral artery in the Vascular Quality Initiative**

- **Determinants of Follow-Up Failure in Patients Undergoing Vascular Surgery Procedures**
PATHWAYS Development Update
Anne Parker, M2S
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 compete, 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.
MIPS Quality Component through the VQI

• 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 PATHWAYSSSupport@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

<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>
<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>
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>
</table>
| Yes       | Up to 30 (9 currently enrolled) | 74 (3 currently enrolled) | 12 months and 24 months | Per Subject: $1400  
- $400 Initial Treatment  
- $500 Each follow up visits  
- $400 Additional TLR or TVR intervention |
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
Next Meeting

• Agree Next Meeting Dates/Location