Vascular Quality Initiative®

SOUTHEASTERN vascular study group

October 6, 2016
10:00-4:00pm
University of Alabama at Birmingham
DIVISION OF VASCULAR SURGERY AND ENDOVASCULAR THERAPY
UAB Campus spans 90 city blocks
University Hospital

- 1046 Beds
- 1,149 Active Medical Staff
- 46,000 Annual Admissions
- 78,225 Annual ED Visits
- 19,929 inpatient and 12,980 outpatient annual surgical cases
- The Kirklin Clinic

*Alabama's principal tertiary healthcare provider*
Vascular Quality Initiative®

SOUTHEASTERN vascular study group

October 6, 2016
10:00-4:00pm
University of Alabama at Birmingham
Morning Session General Meeting 10:00 AM- 12:00 PM

- 10:00-10:15
  Welcome and SEVSG/VQI Update- Yazan Duwayri, MD

- 10:15-10:30
  National VQI Update- Nadine Caputo SVS PSO

- 10:30-10:45
  Pathways Development Update – Betti Kerrigan M2S

- 10:45 -11:10
  Regional Report findings- Yazan Duwayri, MD

- 11:10-11:25
  Arterial and Venous Quality Council updates – Yazan Duwayri, MD & Adam Beck, MD

- 11:25-11:35
  Governing Council Update- Adam Beck, MD

- 11:35-11:55
  Quality Improvement Project Implementation: LOS after CEA- Tatiana Chadid, MD

- 12:30-1:20
  VQI paper review- Jamie Benarroch, MD & Emily Spangler, MD

- 1:20 -1:40
  Atypical Extreme Risk Carotid Endarterectomy for Asymptomatic Carotid Stenosis: Challenges to Traditional Dogma Facing Vascular Surgical Practice in Quaternary Referral Centers- Charles B. Ross, MD

- 1:40-2:00
  Regional Variation in POMI after Vascular Surgery: An Opportunity for Quality Improvement?- Salvatore Scali, MD

- 2:00-2:20
  Update from SVS QPMC- Brad Johnson, MD

- 2:20-2:40
  MACRA Implementation in Large or Academic Group Practices- Jason Hockenberry, PhD

- 2:40-3:00
  VQI Frailty Project- Shipra Arya, MD
Vascular Quality Initiative®

Welcome and Introductions

Albany Vascular Specialist Center
Anderson Regional Medical Center
Athens Regional Medical Center
Baptist Hospital of Miami
Coastal Vascular & Interventional- PLLC
Florida Hospital
Floyd Medical Center
Grady Memorial Hospital (GA)
John F Lucas III- MD
Mayo Clinic Florida
Memorial Health University Medical
Memorial Hospital Pembroke
Memorial Hospital West
Memorial Regional Hospital
North Florida Regional Medical Center
Northside Hospital Atlanta
Northside Hospital Cherokee
Northside Hospital Forsyth

Orlando Health - Dr. P. Phillips Hospital
Orlando Health - Orlando Regional
Orlando Health - South Seminole
Palm Beach Gardens Medical Center
Piedmont Hospital
Redmond Regional Medical Center
Sarasota Memorial Hospital
South Miami Hospital
St. Anthony's Hospital
Tampa Cardiovascular Associates
Tampa General Hospital
The Emory Clinic
The Vein and Vascular Institute of Tampa Bay
Tift Regional Medical Center
University Of Alabama Medical Center
University of Florida- Gainesville
Vascular Surgery Associates
Vascular Quality Initiative®

Southeastern VSG website:

Southeastern Vascular Study Group Menu
- Home
- About Us
- VQI Risk Models
- Contact Us
- Data Elements
- Data Reports
- Events
- Bylaws
- Participating Hospitals and Surgeons
- Data Management
- Vascular Quality Initiative Data Entry Portal

Southeastern Vascular Study Group

SEVSG Meetings 2016
SAVE THE DATE
Date: October 6, 2016
Time: 10:00am - 4:00pm
Location: The University of Alabama at Birmingham, in Birmingham, AL
Registration Link for Fall Meeting:
https://vascular.wufoo.com/forms/zshmv8906

Please see the links below for the Spring Meeting minutes and presentation:
Spring Meeting 2016 - Minutes
Spring Meeting 2016 - Presentation
Vascular Quality Initiative®

17 Regional Quality Groups

Pacific NW Vascular Study Group
Mid-America Vascular Study Group
Midwest Vascular Collaborative
Upper MidWest Vascular Network
Great Lakes Vascular Study Group
Vascular Study Group of New England
Vascular Study Group of Greater New York
Mid-Atlantic Vascular Study Group
Virginius Vascular Study Group
Carolinians Vascular Quality Group
MidSouth Vascular Study Group

Northern California Vascular Study Group
Rocky Mountain Vascular Quality Initiative
Michigan Vascular Study Group
Southern California Vascular Outcomes Improvement Collaborative
Southern Vascular Outcomes Network
Southeastern Vascular Study Group

AK
HI
Vascular Quality Initiative®

Participating Center Growth

VQI Participating Centers

387 Centers, 46 States + Ontario
Vascular Quality Initiative®

Total Procedures Captured (as of 8/1/2016): 311,905

- Peripheral Vascular Intervention: 98,840
- Carotid Endarterectomy: 71,040
- Infra-Inguinal Bypass: 31,994
- Endovascular AAA Repair: 28,276
- Hemodialysis Access: 26,531
- Carotid Artery Stent: 11,760
- Supra-Inguinal Bypass: 10,873
- Open AAA Repair: 8,505
- Thoracic and Complex EVAR: 6,809
- IVC Filter: 5,870
- Lower Extremity Amputations: 5,713
- Varicose Vein: 5,694

VQI Total Procedure Volume
Improving Patient Outcomes

- National QI projects:
  a. Statin and antiplatelet therapy at discharge
  b. EVAR LTFU

- Align registry measures with MACRA/MIPS and future APMs.

- Collaborate with SVS on the creation of Clinical Guidelines and Best Practices, inclusive of appropriateness of care.
National VQI Update:
Nadine Caputo, SVS PSO
VQI 1st Annual Meeting

• Feedback from survey
  – Longer, more interactive sessions
  – Networking time needed
  – Very informative and useful meeting

• Suggestions for next year?
  – 1 ½ days with full day for data managers
  – Topic requests?
Annual Overview

http://www.vascularqualityinitiative.org/successful-inaugural-vqi-annual-meeting-svs-psp-now-planning-next-year/

Annual meeting slides can be downloaded from the M2S PATHWAYS website members only section
Vascular Quality Initiative®

VQI Participation Award
Participation Award

- Results to be released early 2017
- **One change:** Remote attendance awarded for Spring 2016 but not the Fall 2016 or going forward

**Meeting-Participation Score***

- No MD from site attends = 0 points
- 1 MD from site attends = 1 point
- 2 MDs attend (or 1 MD if site has only 2 MDs) = 2 points
- 3 MDs attend (or all MDs if site has <3 MDs) = 3 points

*Additional health professional staff attendance (Data Manager, Admin, NP, PA, Fellow, etc..,) = one additional point if 1 MD attended
PVI registry update

• Public comment VEITH 2015-VAM 2016
• Specs and revisions sent July 25, 2016
  – Allow time to review for any workflow changes
  – Educational webinar/s to review all the changes
• Release delayed until end of September, 2016
• Lessoned Learned from EVAR!!!!
Vascular Medicine Registry Update
Vascular Medicine Registry

• **Scope**
  – Medical management of:
    • Lower extremity PAD
    • Carotid stenosis
    • AAA
  – New outpatient consults that require follow up
  – One year follow up required, longer possible
Vascular Quality Initiative®

Vascular Medicine Registry

– Webinar for final comments Fall 2016

– Release Q1 2017
Inclusion Criteria:
This registry only includes New Outpatient Consults who are being treated medically for:
• Peripheral arterial disease due to atherosclerosis
• Atherosclerotic carotid artery occlusive disease
• Abdominal aortic aneurysm

Exclusion Criteria:
• Evaluation/diagnosis of pseudo or neurogenic claudication, peripheral arterial disease due to trauma, popliteal entrapment, medial adventitious cystic disease, chronic compartment syndrome
• Carotid disease due to dissection, infection, aneurysm, tumor, isolated common carotid lesion not thought to involve the bifurcation, disease of the carotid bifurcation due solely to vasculitis, and Moyamoya disease, and fibromuscular dysplasia
• Isolated aortic dissection without aneurysm
• Thoracic, thoraco-abdominal, and mycotic aneurysms
Vascular Medicine Registry

• **Purpose**
  – Registry to focus on non-operative medical management of these conditions
  – Medication details and dosages, along with lifestyle modifications and counseling will be the emphasis of this registry

• **Opportunities**
  – Identify patterns/variation of treatment and pre-intervention management
  – Identify QI initiatives
  – Opportunities in comparative effectiveness research
Webinar Schedule 2016

– August: PVI registry Procedure changes
– September: PVI registry Follow up changes
– October: QI Guide Implementation series
– November: TEVAR/Complex EVAR vs. EVAR
– December: QI Guide Implementation series
SVS PSO QI Guide: Volunteer to complete charter and follow guide?

Access QI Guide on M2S pathways website using their member IDs under the Resource section

Identify data manager and physician leader to initiate QI process. Schedule of webinars on QI implementation to be released.
PSO Executive Committee Update
Strategic Planning Session

Major Themes for the Planning Sessions included:

- Improving Quality and Patient Outcomes
- Data Accuracy and Integrity
- Optimizing Participation and Engagement
- Long-Term Sustainability and Operational Effectiveness
Improving Quality and Patient Outcomes

- Launch National QI projects, potentially Discharge Meds and EVAR LTFU
- Review and update the key quality measures for each registry and that these measures are reported to its members. These measures should also align to MACRA/MIPS and future APMs.
- Develop messaging on how the QCDR/PQRS measures can help compliance with MIPS for 2017/2018, prior to the creation of a vascular APM.
- Collaborate with SVS on the creation of Clinical Guidelines and Best Practices, inclusive of appropriateness of care.
Vascular Quality Initiative®

Data Accuracy and Integrity

- Continued focus on improving LTFU
- Analyze data on “Cases Submitted Without Validation”
- Pilot Project Using Statistical Analysis to Determine if Variables can be Eliminated (CEA)
- Increase Audits by Frequency and Type
- Increase Training and Education for Data Managers
- Leverage Regional Meetings to Enhance Data Capture and Integrity
Optimizing Participation and Engagement

- Continued Interim Quality Reporting (COPI and Physician Reports)
- Repeat previously issues COPI and/or Physician Reports to show Change Over-Time
- Identify ways to Improve Regional Meeting Participation
- Provide Education on QI Project Guide
- Create and Disseminate Best Practice Case Studies, Featuring VQI Success Stories
- Engage Quality Personnel from VQI Sites in Improvement Efforts
Long-Term Sustainability and Operational Effectiveness

- Create an Infrastructure for Increased Audit Activity
- Prioritize Registry Maintenance and Development
- Continue to Improve Reporting and Analytics
- Expand VQI Annual Meeting to Include Additional Time for Data Manager Education and Networking
Regional Reports:
Yazan Duwayri, MD

Note: In all reports, regional data are not shown for regions with <3 centers participating in the applicable registry. In "by Center" bar charts, unless noted, data are not shown for centers with <10 cases.
## Vascular Quality Initiative®

Total Procedure Volume, All Years (2003-May 2016)

<table>
<thead>
<tr>
<th>Your region</th>
<th>Your region</th>
<th>VQI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total procedures</td>
<td>Total procedures</td>
</tr>
<tr>
<td>CAS</td>
<td>690</td>
<td>10850</td>
</tr>
<tr>
<td>CEA</td>
<td>4480</td>
<td>65763</td>
</tr>
<tr>
<td>EVAR</td>
<td>1581</td>
<td>26031</td>
</tr>
<tr>
<td>HEMO</td>
<td>3933</td>
<td>23762</td>
</tr>
<tr>
<td>INFRA</td>
<td>1933</td>
<td>29387</td>
</tr>
<tr>
<td>OAAA</td>
<td>436</td>
<td>7967</td>
</tr>
<tr>
<td>PVI</td>
<td>4373</td>
<td>88151</td>
</tr>
<tr>
<td>SUPRA</td>
<td>744</td>
<td>9843</td>
</tr>
<tr>
<td>TEVAR</td>
<td>681</td>
<td>5777</td>
</tr>
<tr>
<td>IVCF</td>
<td>213</td>
<td>2088</td>
</tr>
<tr>
<td>Varicose Veins</td>
<td>425</td>
<td>4229</td>
</tr>
<tr>
<td>LEAMP</td>
<td>507</td>
<td>5166</td>
</tr>
<tr>
<td>Overall</td>
<td>19996</td>
<td>279014</td>
</tr>
</tbody>
</table>
### Vascular Quality Initiative®

#### Percentage of Procedures Submitted With Missing Data (Jan 2015-May 2016)

<table>
<thead>
<tr>
<th></th>
<th>Your region</th>
<th>VQI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total procedures (% missing data)</td>
<td>Total procedures (% missing data)</td>
</tr>
<tr>
<td>CAS</td>
<td>248 (69%)</td>
<td>3777 (51%)</td>
</tr>
<tr>
<td>CEA</td>
<td>1782 (30%)</td>
<td>19909 (33%)</td>
</tr>
<tr>
<td>EVAR</td>
<td>544 (81%)</td>
<td>7773 (60%)</td>
</tr>
<tr>
<td>HEMO</td>
<td>1476 (28%)</td>
<td>9198 (26%)</td>
</tr>
<tr>
<td>INFRA</td>
<td>757 (86%)</td>
<td>8048 (82%)</td>
</tr>
<tr>
<td>OAAA</td>
<td>108 (22%)</td>
<td>1825 (29%)</td>
</tr>
<tr>
<td>PVI</td>
<td>2373 (68%)</td>
<td>30123 (56%)</td>
</tr>
<tr>
<td>SUPRA</td>
<td>272 (72%)</td>
<td>2755 (80%)</td>
</tr>
<tr>
<td>TEVAR</td>
<td>199 (10%)</td>
<td>2337 (28%)</td>
</tr>
<tr>
<td>IVCF</td>
<td>130 (42%)</td>
<td>1133 (23%)</td>
</tr>
<tr>
<td>Varicose Veins</td>
<td>424 (18%)</td>
<td>4228 (29%)</td>
</tr>
<tr>
<td>LEAMP</td>
<td>309 (84%)</td>
<td>2684 (73%)</td>
</tr>
<tr>
<td>2015 overall</td>
<td>8622 (52%)</td>
<td>93790 (49%)</td>
</tr>
<tr>
<td>2014 overall</td>
<td>5090 (49%)</td>
<td>67064 (48%)</td>
</tr>
</tbody>
</table>
Percentage of Procedures Submitted With Missing Data (Jan 2015-May 2016)

* Indicates region's rate is significantly different than overall VQI rate. "Others" indicates centers that do not belong to a regional group.
# LTFU Reports

<table>
<thead>
<tr>
<th>Your region</th>
<th>Follow-up rate (N)</th>
<th>VQI</th>
<th>Follow-up rate (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>41% (169)</td>
<td></td>
<td>54% (2331)</td>
</tr>
<tr>
<td>CEA</td>
<td>46% (1170)</td>
<td></td>
<td>56% (14511)</td>
</tr>
<tr>
<td>EVAR</td>
<td>44% (388)</td>
<td></td>
<td>56% (5757)</td>
</tr>
<tr>
<td>HEMO</td>
<td>64% (1032)</td>
<td></td>
<td>55% (6584)</td>
</tr>
<tr>
<td>INFRA</td>
<td>45% (395)</td>
<td></td>
<td>60% (5865)</td>
</tr>
<tr>
<td>OAAA</td>
<td>54% (91)</td>
<td></td>
<td>62% (1414)</td>
</tr>
<tr>
<td>PVI</td>
<td>44% (1187)</td>
<td></td>
<td>53% (21120)</td>
</tr>
<tr>
<td>SUPRA</td>
<td>48% (120)</td>
<td></td>
<td>61% (2096)</td>
</tr>
<tr>
<td>TEVAR</td>
<td>61% (156)</td>
<td></td>
<td>54% (1456)</td>
</tr>
<tr>
<td>IVCF*</td>
<td>41% (54)</td>
<td></td>
<td>44% (686)</td>
</tr>
<tr>
<td>2013 overall</td>
<td>50% (4762)</td>
<td></td>
<td>55% (61820)</td>
</tr>
<tr>
<td>2012 overall</td>
<td>75% (2662)</td>
<td></td>
<td>68% (45345)</td>
</tr>
</tbody>
</table>
Vascular Quality Initiative®

LTFU Reports

LTFU by Center in Your Region (2014)

LTFU by Region across VQI (2014)

* Indicates region's rate is significantly different than overall VQI rate.
"Others" indicates centers that do not belong to a regional group.
Discharge Medications Antiplatelet and Statin
(Jan 2015-May 2016)
Excludes missing, not treated for medical reason and non-compliant

A+S Rate by Center in Your Region
(Jan 2015-May 2016)

A+S Rate by Region across VQI
(Jan 2015-May 2016)

* Indicates region's rate is significantly different than overall VQI rate
"Others" indicates centers that do not belong to a regional group
Perioperative management with antiplatelet and statin medication is associated with reduced mortality following vascular surgery

Randall R. De Martino, MD, MS, Jens Eldrup-Jørgensen, MD, Brian W. Nolan, MD, MS, David H. Stone, MD, Julie Adams, MD, Daniel J. Bertges, MD, Jack L. Cronenwett, MD, and Philip P. Goodney, MD, MS on behalf of the Vascular Study Group of New England

Participation in the Vascular Quality Initiative is associated with improved perioperative medication use, which is associated with longer patient survival

Randall R. De Martino, MD, MS, Andrew W. Hoel, MD, Adam W. Beck, MD, Jens Eldrup-Jørgensen, MD, John W. Hallett, MD, Gilbert R. Upchurch, MD, Jack L. Cronenwett, MD, and Philip P. Goodney, MD, MS, for the Vascular Quality Initiative, Rochester, Minn; Chicago, Ill; Gainesville, Fla; Portland, Me; Charleston, SC; Charlottesville, Va; and Lebanon, NH
National QI Initiative to Increase Statin Use
Regional Participation Is Important

Discharge Statin Use Jan 2011 - July 2016

- Jan 2011 - July 2015
- August 2015 - July 2016

Discharge Statin Use (%)
Varicose Veins: Percentage of Procedures with Complete Patient-Reported Outcome Measures Recorded at Follow Up (Jan 2015-May 2016) procedures; includes only patients with any follow-up visit recorded. All regional data omitted because most regions have <3 centers. Patient-reported outcome measures (PROMs) include heaviness, achiness, swelling, throbbing, itching, appearance and impact on work in side of operation.
Vascular Quality Initiative®
Percentage of infrainguinal Bypass Procedures with Chlorhexidine or Chlorhexidine + Alcohol Skin Prep
(Jan 2015-May 2016)

Chlorhexidine Rate by Center in Your Region
(Jan 2015-May 2016)

Chlorhexidine Rate by Region across VQI
(Jan 2015-May 2016)

* Indicates region's rate is significantly different than overall VQI rate. “Others” indicates centers that do not belong to a regional group.
Vascular Quality Initiative®

Infrainguinal Bypass: Percentage of Procedures with In-Hospital Surgical Site Infection (Jan 2015-May 2016)

In-Hospital Infection Rate by Center in Your Region
(Jan 2015-May 2016)

In-Hospital Infection Rate by Region across VQI
(Jan 2015-May 2016)

* Indicates region’s rate is significantly different than overall VQI rate.
"Others" indicates centers that do not belong to a regional group.
Vascular Quality Initiative®

Percentage of Percutaneous Femoral PVI Procedures Using Ultrasound Guidance (Jan 2015-May 2016) Excludes cut–down

Rate of US Guidance by Center in Your Region (Jan 2015-May 2016)

Rate of US Guidance by Region across VQI (Jan 2015-May 2016)

* Indicates region’s rate is significantly different than overall VQI rate.
Vascular Quality Initiative®

Rate of Hematoma After PVI (Jan 2015-May 2016)
Excluding cut-down access guidance

Rate of Any Hematoma by Center in Your Region
(Jan 2015-May 2016)

Rate of Any Hematoma by Region across VQI
(Jan 2015-May 2016)

* Indicates region’s rate is significantly different than overall VQI rate.
PVI: Percent of Patients with ABI or TBI Assessed Before Procedure (Jan 2015-May 2016)

“ABI or TBI Assessed” indicates at least one measure was recorded for the side of the procedure, or on both sides for bilateral and aortic procedures.
EVAR: Rate of Sac Diameter Reporting at Long-Term Follow Up 2014, excluding patients without at least 9 month follow up.
TEVAR: Rate of Sac Diameter Reporting at Long-Term Follow Up 2014, excluding patients without at least 9 month follow up (your region did not have at least 3 centers with 10 procedures)
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
Open AAA Repair: Percentage of Patients with Length of Stay $\geq$ 8 Days

(Jan 2015-May 2016)

procedures, excluding ruptured aneurysms and in hospital deaths with LOS$\leq$8 days, procedures not done on day of admission and weekend procedures

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

* = Region’s rate is significantly different than expected
Vascular Quality Initiative®

Endovascular AAA Repair:
Percentage of Patients with Length of Stay > 2 Days
(Jan 2015-May 2016)

procedures, Excluding symptomatic, ruptured, prior aortic surgery, in hospital deaths with LOS <=2days, procedures not done on day of admission and weekend procedures.
Hemodialysis Access: Percentage of Primary AVF vs. Graft (Jan 2015-May 2016)
procedures, excludes patients receiving AVF access who have received previous access in the forearm, upper arm or basilic vein on the same side
IVC Filter: Percentage of Temporary Filters with Retrieval or Attempt at Retrieval
(Jan 2015-May 2016) procedures, excluding patients who have died since discharge
(your region did not have at least 3 centers with 10 procedures)
Vascular Quality Initiative®

Carotid Artery Stent: Stroke or Death in Hospital (Jan 2015-May 2016) procedures, elective, excluding prior ipsilateral CAS

CAS Stroke or Death by Center in Your Region (Jan 2015-May 2016)

CAS Stroke or Death by Region across VQI (Jan 2015-May 2016)

YR=Your Region; * = Region’s rate is significantly different than expected
Carotid Endarterectomy: Stroke or Death in Hospital (Jan 2015-May 2016) procedures, elective, excluding prior ipsilateral CEA and concomitant CABG
Vascular Quality Initiative®

Infrainguinal Bypass: Percentage of Major Complications
(Jan 2015-May 2016)

procedures, Major complications= In hospital death, ipsilateral amputation or graft occlusion. Includes only patients with Indication=Rest Pain or Tissue Loss
Open Non-ruptured AAA: In hospital Mortality (Jan 2015-May 2016) procedures, excluding weekend procedures (your region did not have at least 3 centers with 10 procedures)
National Research Projects:

• This year the SVS PSO Research Advisory Committee (RAC) approved 64 national research projects submitted by 51 VQI investigators from 26 centers.

• http://www.vascularqualityinitiative.org/wp-content/uploads/VQI_Approved_Projects_List-7.15.16-for-Publish.pdf
Regional Research Projects:

Arterial Quality Council Update: Adam Beck, MD
Vascular Quality Initiative®

Actionable Reports

• Physician-level Reporting: these comparisons allow sites to analyse blinded physician results between physicians at the same site as well as between facilities to understand detailed results and best practices.

• Site-level Reporting (Center Opportunity Profile for Improvement Reports): Similar to the physician data, the COPI Reports provide detailed national and regional benchmarking on quality improvement such as length of stay.
Vascular Quality Initiative®

COPI and Physician Reports

• In addition to the spring and fall regional reports, this year we have published two COPI reports:
  – 30-day stroke and 1-year mortality after CEA
  – 30-day stroke or 1-year mortality after CAS
• We have also published two surgeon-level reports:
  – Percentage of high-risk patients receiving CEA
  – Percentage of patients receiving follow-up imaging after EVAR
• At least two additional reports are planned for this year:
  – COPI report on hematoma after PVI
  – Surgeon-level report on percentage of high-risk patients receiving CAS
Cardiac Risk Calculators:

Current ongoing AQC work:

- Finalized PVI registry updates
- Updating CAS registry
- Determining variables per registry that negate the need for LTFU
- Data Audits
Governing Council Update:
Adam Beck, MD
The Governing Council approved the policy of un-blinding LTFU Reporting Rates, if a majority of members of the regional group agree to un-blind the LTFU data.

M2S and Medstreaming provided the Committee with an overview on what the acquisition might afford VQI members:

- Enhanced Analytics
- Experience with data integration from EMRs
- Extensive experience with outpatient data that complements M2S experience with inpatient data.

Announcement of the new PSO Communications Committee

- Glen Jacobowitz from NYU Langone, Chair
- Leila Mureebe from Duke University Medical Center, Vice Chair
Venous Quality Council Update:
Yazan Duwayri, MD
Venous Quality Council

- Less active than AQC
- Increased # of procedures looking at data and QI opportunities
**Vascular Quality Initiative®**

**IVC Filter**

<table>
<thead>
<tr>
<th>IVC Filter: 2014 (N=808)</th>
<th>Value:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reason filter placed (header)</td>
<td></td>
</tr>
<tr>
<td>Pulmonary Embolism</td>
<td>290 (35.9%)</td>
</tr>
<tr>
<td>Lower Extremity DVT</td>
<td>472 (58.4%)</td>
</tr>
<tr>
<td>Free Floating Thrombus</td>
<td>8 (5.7%)</td>
</tr>
<tr>
<td>Recurrent VTE on Anticoagulant</td>
<td>66 (33.3%)</td>
</tr>
<tr>
<td>Recent Trauma</td>
<td>85 (40.9%)</td>
</tr>
<tr>
<td>Major Procedure Planned</td>
<td>141 (67.8%)</td>
</tr>
<tr>
<td>Temporary Filters Placed</td>
<td>592 (73.7%)</td>
</tr>
<tr>
<td>Temporary Filters Removed/Attempt to remove</td>
<td>172 (63.2%)</td>
</tr>
<tr>
<td>Post op New DVT</td>
<td>11 (3.5%)</td>
</tr>
<tr>
<td>Post op New PE</td>
<td>3 (1%)</td>
</tr>
</tbody>
</table>

**Post op Filter complication**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Value:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Migration &gt;20 mm cephalad</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Migration &gt; 20 mm caudal</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Filter Angle Increases &gt;15 degrees</td>
<td>1 (0.2%)</td>
</tr>
<tr>
<td>Filter Fracture</td>
<td>1 (0.2%)</td>
</tr>
<tr>
<td>Caval/Iliac Vein Thromosis</td>
<td>4 (0.9%)</td>
</tr>
<tr>
<td>Thrombosis in Filter</td>
<td>2 (0.4%)</td>
</tr>
<tr>
<td>Embolization filter/fragments</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Vein Wall perforation</td>
<td>5 (1.1%)</td>
</tr>
<tr>
<td>Varicose Vein: 2015 (N=2972)</td>
<td>Value:</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Average (SD) VCSS score</td>
<td>8.5 (3.9)</td>
</tr>
<tr>
<td>Ablation Treatment (header):</td>
<td></td>
</tr>
<tr>
<td>Thermal, RF</td>
<td>831 (28.4%)</td>
</tr>
<tr>
<td>Thermal, Laser</td>
<td>611 (20.9%)</td>
</tr>
<tr>
<td>Mechanochemical</td>
<td>17 (0.6%)</td>
</tr>
<tr>
<td>Chemical</td>
<td>220 (7.5%)</td>
</tr>
<tr>
<td>Embolic Adhesive</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Surgery</td>
<td>1251 (42.7%)</td>
</tr>
<tr>
<td>Pre Op average (SD) CEAP</td>
<td>3.2 (1.3)</td>
</tr>
<tr>
<td>Post Op average (SD) CEAP</td>
<td>2.3 (1.6)</td>
</tr>
<tr>
<td>Post Op average (SD) VCSS score</td>
<td>4.2 (3.8)</td>
</tr>
<tr>
<td>Post Op compression</td>
<td>1179 (71.4%)</td>
</tr>
<tr>
<td>Post Op treated vein recanalyzed</td>
<td>25 (1.4%)</td>
</tr>
</tbody>
</table>
Pathways Development Update: Betti Kerrigan, M2S
Vascular Quality Initiative®

Drill Down – Procedures With Both Statin and Antiplatelet Agents Prescribed at Discharge

Report Name: Procedures With Both Statin and Antiplatelet Agents Prescribed at Discharge
Procedure Type: Carotid Artery Stent, Carotid Endarterectomy, Endo AAA Repair, Intra-inguinal Bypass, Open AAA Repair, Peripheral Vascular Intervention, Supra-inguinal Bypass, Thoracic and Complex EVAR

<table>
<thead>
<tr>
<th>Procedure Variable Name</th>
<th>My Center Results (N=809)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>12.0% (97)</td>
</tr>
<tr>
<td>Yes</td>
<td>88.0% (712)</td>
</tr>
<tr>
<td>Missing Value or N/A</td>
<td>0.0% (0)</td>
</tr>
</tbody>
</table>
Drill down – Procedures With Both Statin and Antiplatelet Agents Prescribed at Discharge

<table>
<thead>
<tr>
<th>Registry</th>
<th>First Name</th>
<th>Last Name</th>
<th>Procedure Date</th>
<th>MRN</th>
<th>Physician</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intra-inguinal Bypass</td>
<td>Paul</td>
<td>Bearer</td>
<td>07/01/2015</td>
<td>123</td>
<td>Marcus Jekyll</td>
</tr>
<tr>
<td>Supra-inguinal Bypass</td>
<td>Paul</td>
<td>Bearer</td>
<td>07/01/2015</td>
<td>123</td>
<td>Marcus Jekyll</td>
</tr>
<tr>
<td>Peripheral Vascular Intervention</td>
<td>Paul</td>
<td>Bearer</td>
<td>07/01/2015</td>
<td>123</td>
<td>Marcus Jekyll</td>
</tr>
<tr>
<td>Thoracic and Complex EVAR</td>
<td>Paul</td>
<td>Bearer</td>
<td>10/01/2015</td>
<td>123</td>
<td>Marcus Jekyll</td>
</tr>
<tr>
<td>Open AAA Repair</td>
<td>Zaphed</td>
<td>Beagleton</td>
<td>12/03/2015</td>
<td>123432</td>
<td>Bob Moloney2</td>
</tr>
<tr>
<td>Endo AAA Repair</td>
<td>Valentine</td>
<td>Smith</td>
<td>02/04/2014</td>
<td>52445456</td>
<td>Walter J Freeman</td>
</tr>
<tr>
<td>Thoracic and Complex EVAR</td>
<td>Valentine</td>
<td>Smith</td>
<td>02/03/2015</td>
<td>52445456</td>
<td>Walter J Freeman</td>
</tr>
<tr>
<td>Intra-inguinal Bypass</td>
<td>Test17</td>
<td>Test90</td>
<td>03/20/2013</td>
<td>1900001</td>
<td>F991 L991</td>
</tr>
<tr>
<td>Peripheral Vascular Intervention</td>
<td>Test17</td>
<td>Test90</td>
<td>03/20/2013</td>
<td>1900001</td>
<td>F991 L991</td>
</tr>
<tr>
<td>Peripheral Vascular Intervention</td>
<td>Test17</td>
<td>Test90</td>
<td>04/10/2013</td>
<td>1900001</td>
<td>F991 L991</td>
</tr>
</tbody>
</table>
Vascular Quality Initiative®

Drill down – Procedures With Both Statin and Antiplatelet Agents Prescribed at Discharge
Drill Down Permissions

• Physicians can only drill down to their own patient level data
• Hospital Manager and all other non-physician users can only drill down if they have permissions to the “procedure and follow up download reports” privilege (granted by M2S with hospital manager approval)
Vascular Quality Initiative®

Shared Reports – Where to find them

Create a New Common Variables Report:
- Common Variables

Create a New Life Table Report for:
- Intra-inguinal Bypass Freedom from Amputation
- PVI Freedom from Major Amputation
- PVI Freedom from Target Lesion Revascularization

Create a New Risk-Adjusted Report for:
- In-hospital Death after Primary Isolated Elective CEA
- LOS > 1 Day after Primary Isolated Elective CEA
- In-hospital Stroke after Primary Isolated Elective CEA
- In-hospital Stroke or Death after Primary Isolated Elective CEA
- In-hospital Stroke or Death after Primary Elective CAS
- LOS > 2 Days after Elective EVAR

Create a New Custom Report for:
- Carotid Endarterectomy
- Carotid Artery Stent

Shared Reports:

<table>
<thead>
<tr>
<th>Report Name</th>
<th>Type</th>
<th>Created on</th>
<th>Updated on</th>
<th>Shared</th>
<th>Retired</th>
<th>Shared by</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS Post Op Complications</td>
<td>Carotid Artery Stent</td>
<td>06/14/2016</td>
<td>06/24/2016</td>
<td>✔</td>
<td></td>
<td>VHEADON-ADMN</td>
</tr>
<tr>
<td>Effective TEVAR Access to All Complications Except Death</td>
<td>Thoracic and Complex EVAR</td>
<td>01/07/2016</td>
<td>06/15/2016</td>
<td>✔</td>
<td>✔</td>
<td>VHEADON-ADMN</td>
</tr>
<tr>
<td>Hemo AVF vs Graft</td>
<td>Hemodialysis Access</td>
<td>01/07/2016</td>
<td>06/24/2016</td>
<td>✔</td>
<td>✔</td>
<td>VHEADON-ADMN</td>
</tr>
<tr>
<td>Major Amputations Requiring Revision Prior to Discharge</td>
<td>Lower Extremity Amputation</td>
<td>01/11/2016</td>
<td>06/15/2016</td>
<td>✔</td>
<td>✔</td>
<td>VHEADON-ADMN</td>
</tr>
<tr>
<td>Major Complications for Supra Bypass Origin at the Aorta</td>
<td>Supra-inguinal Bypass</td>
<td>06/09/2016</td>
<td>06/24/2016</td>
<td>✔</td>
<td>✔</td>
<td>VHEADON-ADMN</td>
</tr>
<tr>
<td>Major Complications for Supra Bypass Origin at the Axillary</td>
<td>Supra-inguinal Bypass</td>
<td>05/10/2016</td>
<td>06/24/2016</td>
<td>✔</td>
<td>✔</td>
<td>VHEADON-ADMN</td>
</tr>
<tr>
<td>Major Complications for Supra Bypass Origin at the Femoral</td>
<td>Supra-inguinal Bypass</td>
<td>05/10/2016</td>
<td>06/24/2016</td>
<td>✔</td>
<td>✔</td>
<td>VHEADON-ADMN</td>
</tr>
<tr>
<td>Major Complications for Supra Bypass Origin at the Iliac</td>
<td>Supra-inguinal Bypass</td>
<td>05/10/2016</td>
<td>06/24/2016</td>
<td>✔</td>
<td>✔</td>
<td>VHEADON-ADMN</td>
</tr>
<tr>
<td>Procedures with Both Statin and Antiplatelet Agents Prescribed at Discharge</td>
<td>Common Variables</td>
<td>03/22/2016</td>
<td>06/15/2016</td>
<td>✔</td>
<td>✔</td>
<td>VHEADON-ADMN</td>
</tr>
<tr>
<td>Supra Graft Complications Aorta Origin</td>
<td>Supra-inguinal Bypass</td>
<td>04/20/2016</td>
<td>06/24/2016</td>
<td>✔</td>
<td>✔</td>
<td>VHEADON-ADMN</td>
</tr>
<tr>
<td>Supra Graft Complications Axillary Origin</td>
<td>Supra-inguinal Bypass</td>
<td>05/09/2016</td>
<td>06/24/2016</td>
<td>✔</td>
<td>✔</td>
<td>VHEADON-ADMN</td>
</tr>
<tr>
<td>Supra Graft Complications Femoral Origin</td>
<td>Supra-inguinal Bypass</td>
<td>05/09/2016</td>
<td>06/24/2016</td>
<td>✔</td>
<td>✔</td>
<td>VHEADON-ADMN</td>
</tr>
<tr>
<td>Supra Graft Complications Iliac Origin</td>
<td>Supra-inguinal Bypass</td>
<td>05/09/2016</td>
<td>06/24/2016</td>
<td>✔</td>
<td>✔</td>
<td>VHEADON-ADMN</td>
</tr>
</tbody>
</table>

My Saved Reports:

<table>
<thead>
<tr>
<th>Report Name</th>
<th>Type</th>
<th>Created on</th>
<th>Updated on</th>
<th>Shared</th>
<th>Retired</th>
<th>Shared by</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEA LOS</td>
<td>Carotid Endarterectomy</td>
<td>01/11/2016</td>
<td>05/08/2016</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>PVI AB/TBI</td>
<td>Peripheral Vascular Intervention</td>
<td>03/28/2016</td>
<td>03/28/2016</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
</tbody>
</table>
## Reports Available in PATHWAYS Analytics

<table>
<thead>
<tr>
<th>Reports Available</th>
<th>Registry</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS Post Op Complications</td>
<td>CAS</td>
</tr>
<tr>
<td>Elective TEVAR Aneurysm for All Complications Except Death</td>
<td>TEVAR</td>
</tr>
<tr>
<td>Hemodialysis AVF vs Graft</td>
<td>Hemo</td>
</tr>
<tr>
<td>Major Amputations Requiring Revision Prior to Discharge</td>
<td>LEA</td>
</tr>
<tr>
<td>Major Complications for Supra Bypass Origin at the Aorta</td>
<td>Supra</td>
</tr>
<tr>
<td>Major Complications for Supra Bypass Origin at the Axillary</td>
<td>Supra</td>
</tr>
<tr>
<td>Major Complications for Supra Bypass Origin at the Femoral</td>
<td>Supra</td>
</tr>
<tr>
<td>Major Complications for Supra Bypass Origin at the Iliac</td>
<td>Supra</td>
</tr>
<tr>
<td>Procedures with Both Statin and Antiplatelet Agents Prescribed at Discharge</td>
<td>CAS, CEA, EVAR, Infra, Open, PVI, Supra, TEVAR</td>
</tr>
<tr>
<td>Supra Graft Complications Aorta Origin</td>
<td>Supra</td>
</tr>
<tr>
<td>Supra Graft Complications Axillary Origin</td>
<td>Supra</td>
</tr>
<tr>
<td>Supra Graft Complications Femoral Origin</td>
<td>Supra</td>
</tr>
<tr>
<td>Supra Graft Complications Iliac Origin</td>
<td>Supra</td>
</tr>
<tr>
<td>Elective TEVAR Aneurysm for all complications including death</td>
<td>TEVAR</td>
</tr>
<tr>
<td>ICU Days &gt;= 3 Days</td>
<td>Open, EVAR, TEVAR, Supa</td>
</tr>
<tr>
<td>Major Cardiac Event Composite</td>
<td>Open, EVAR, TEVAR, Supra, Infra</td>
</tr>
</tbody>
</table>
Shared Reports – Modify and Save to Meet Your Needs

Click to Save As
Vascular Quality Initiative®

Physician-level Reporting – Choose Your View

Center or Physician?
Vascular Quality Initiative®

Physician-level Reporting – Selecting included Physician(s)

Select from Dropdown
### Vascular Quality Initiative®

### Physician-level Reporting

<table>
<thead>
<tr>
<th>Procedure Variable Name</th>
<th>Kaityn McGlynn (N=1)</th>
<th>Nicolette McDermott (N=1)</th>
<th>Hiram Kastner (N=1)</th>
<th>Reynold Langworth (N=9)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Arterial Dissection</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>100.0% (1)</td>
<td>100.0% (1)</td>
<td>100.0% (1)</td>
<td>88.9% (8)</td>
</tr>
<tr>
<td>Iliac</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Fem-pop</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>11.1% (1)</td>
</tr>
<tr>
<td>Tibial</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Missing Value or NA</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td><strong>Arterial Perforation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>100.0% (1)</td>
<td>100.0% (1)</td>
<td>100.0% (1)</td>
<td>100.0% (8)</td>
</tr>
<tr>
<td>Iliac</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Fem-pop</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Tibial</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td>Missing Value or NA</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
</tr>
<tr>
<td><strong>Distal Embolization</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>100.0% (1)</td>
<td>100.0% (1)</td>
<td>100.0% (1)</td>
<td>100.0% (8)</td>
</tr>
<tr>
<td>Minor</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
<td>0.0% (0)</td>
</tr>
</tbody>
</table>
Release Order

• Shared Reporting (released)
• Drill Down (released)
• Physician-level Reporting Q4
• Modifying common variables – can be common across tabs Q4
EMR Integration Status Updates

• Integration for Varicose Vein procedure form
  – Released and officially certified 2 vendors
    • Medstreaming
    • Mtuitive
• Integration for PVI procedure form
  – Planned to be available in Q4 2016
• Integration for procedure forms of other registries
  – Planned to be available in 2017
• Integration for follow-up forms
  – Planned to be available in 2017
Lombard Aorfix Surveillance Project

• Enrolling patients and sites!
• Enrollment target: 234 patients
  – Enrollment to date: 38 patients
• Custom content
  – Datafields: ~ 10 fields
  – Timepoints: 30d, annually through 5 yrs
  – Other: Send images to Core Lab

Contact the Project Managers at AorfixProject@m2s.com for more information
TEVAR Surveillance Project

- Longest running VQI Surveillance project
- Two cohorts
  - 5 year cohort is fully enrolled
  - 1 year cohort – enrollment is in progress
- The earliest patients are reaching the 3-year timepoint
- The FDA is very enthusiastic about using registries for post-market surveillance quality improvement projects

Contact the Project Managers at TEVARProject@m2s.com for more information
CREST 2 Registry Project

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

• Bard has recently partnered with the VQI for a post approval project for the LifeStent® Vascular Stent System.
• Invitations sent
• Patients: 74 patients
• Timepoints: Procedure, 1 yr, 2 yr
  – Less than 5 custom VQI content
  – Images sent to Imaging CoreLab at 1 yr. and 2 yr. if specific Adverse Events are reported
TransCarotid Revascularization Surveillance Project (TSP)

• The VQI has launched a surveillance project to evaluate the safety and effectiveness of trans-carotid artery revascularization (TCAR) in comparison with carotid endarterectomy (CEA).

• The VQI TSP was approved on Sept. 1 by the Centers for Medicare and Medicaid Services under the current National Coverage Determination.

• TCAR cases that fall within the inclusion criteria to be reimbursed by CMS, under the TCAR Surveillance Project # NCT02850588, must be entered into the new CAS data form to be eligible for reimbursement.

• The current SVS PSO CAS Registry must be revised to capture appropriate data for the TSP. This revision is expected to be completed by late November.
TransCarotid Revascularization Surveillance Project (TSP)

- The TSP requires that the procedure be performed in high surgical risk patients (asymptomatic or symptomatic) and that data about the procedure and one-year follow-up be submitted to the VQI CAS Registry in order to qualify for Medicare coverage.

- Anyone choosing to participate in the TSP must enter all TCAR and CAS data into the VQI CAS registry.
A QCDR is a CMS-approved entity that collects medical and/or clinical data for the purpose of patient and disease tracking to foster improvement in the quality of care provided to patients.

Individual EPs who satisfactorily participate in 2016 PQRS through a QCDR may avoid the 2018 negative payment adjustment.

26 Measures Available in 2016

To successfully participate:
- 9 measures
- across 3 domains
- 2 outcome measures
- reporting rate > 50% Medicare patients
- 2015 procedures must be followed up by 12/31/2016
The VQI is celebrating its Anniversary!
Vascular Quality Initiative®

**New VQI Customers (Nov 18th)**
Give us a chance to show you the power of your data.

Choose FIVE or more registries and your site will save $2,500 off your first year!

**Current VQI Customer (Dec 31st)**
Thank you for playing such a big role in our success.

Add an additional VQI registry to your package, and receive a one-time $500 credit, per site, at the time of renewal.