Great Lakes Vascular Study Group (GLVSG)

April 30, 2021
1 pm - 3:30 pm ET
Remote
Meeting Attendance Credit

Before we get started, please sign in.

1. Click “Participants” in the box at the top or bottom of your screen.
2. If your full name is not listed, hover next to your name and you’ll see “rename”.
3. Click and sign in.

If you can’t sign in, please email Leka Johnson at ljohnson@svspso.org and let her know the identifier you were signed in under (ex –LM7832 or your phone number).

**SPECIAL NOTE: We do give credit to residents/fellows that don’t have a PATHWAYS user account !!!

Sign in with your Full name, MD, Name of Institution
<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>CE Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00 pm</td>
<td>Welcome</td>
<td>No</td>
</tr>
<tr>
<td>1:05 pm</td>
<td>Regional Data Review</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Mohammad Eslami, MD, Regional Medical Leader, GLVSG</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Learning Objectives:</td>
<td></td>
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<tr>
<td></td>
<td>• Use the VQI regional reports to establish quality improvement goals for the vascular patients (outcomes) and for their center (process).</td>
<td></td>
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<tr>
<td></td>
<td>• Interpret and compare each centers’ VQI results to regional and national benchmarked data.</td>
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<td></td>
<td>• Learn, through group discussion the VQI regional results to improve the quality of vascular health care by monitoring measurable performance indicators, SVS PSO evidence-based research, and outcomes.</td>
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<tr>
<td></td>
<td>• Identify high performing regional vascular centers to discuss variations in care and clinical practice patterns to improve outcomes and prompt quality improvement recommendations for vascular care patients. Sharing of best practices/pathways of care.</td>
<td></td>
</tr>
<tr>
<td>2:05 pm</td>
<td>Regional QI Proposal</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Mohammad Eslami, MD, Regional Medical Leader, GLVSG</td>
<td></td>
</tr>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>
### Agenda (con’t)

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>CE Credit</th>
</tr>
</thead>
</table>
| 2:35 pm| National VQI Update  
Caroline Morgan, BSN, Clinical Associate, PSO  
Learning Objectives:  
• Use the VQI regional reports to establish quality improvement goals for the vascular patients (outcomes) and for their center (process).  
• Identify high performing regional vascular centers to discuss variations in care and clinical practice patterns to improve outcomes and prompt quality improvement recommendations for vascular care patients.  
Sharing of best practices/pathways of care. | Yes       |
| 3:05 pm| AQC Update – John Moawad, M.D.                                       | No        |
|        | VQC Update – Fedor Lurie, M.D.                                       | No        |
|        | RAC Update – Michael Madigan, M.D.                                    | No        |
|        | Governing Council Update – Mohammad Eslami, M.D.                     | No        |
| 3:20 pm| Case Presentations  
1. Othman Abdul-Malak, MD – Alternative Conduits Have Worse Outcomes Than Prosthetic Grafts for Intra-Inguinal Bypass  
2. Elizabeth Andraska, MD - Using the VQI to evaluate utilization trends after Medicaid expansion | No        |
| 3:30 pm| Open Discussion/Next Meeting/Meeting Evaluation                      | No        |
No presenter has a disclosure or conflict of interest to report.
Welcome and Introductions

Allegheny Clinic Vascular Surgery
Aultman Hospital
Bethesda North Hospital
Cleveland Clinic
Clinton Memorial Hospital
DLP Conemaugh Memorial Medical Center, LLC
Doctors Hospital
Fairfield Medical Center
Genesis Hospital
Good Samaritan Hospital
Grady Memorial Hospital
Grant Medical Center
Mansfield Hospital
Marietta Memorial Hospital
Marion General Hospital
Metro Health Medical Center
Mount Carmel East Hospital
Mount Carmel Grove City Hospital
Mount Carmel St. Ann's Hospital
ProMedica Toledo Hospital
Riverside Methodist Hospital
St. Clair Hospital
Steward Trumbull Memorial Hospital, Inc
Summa Health System
The Christ Hospital
University Hospitals Ahuja Medical Center
University Hospitals Cleveland Medical Center
University of Cincinnati Medical Center, LLC
UPMC Altoona
UPMC Williamsport
UPMC/hamot Hospital
UPP Vascular Surgery
West Medical Center
Westmoreland Regional Hospital
Wexner Medical Center

New Centers = 2
Total Centers = 35
Mohammad Eslami, MD

VQI Regional Quality Report

Spring 2021

This report is patient safety work product generated within the SVS PSO, LLC, and is considered privileged and confidential.

About the Report

The VQI Regional Quality Report is produced semiannually to provide centers and regions targeted, comparative results and benchmarks for a variety of procedures, process measures, and postoperative outcomes. The report is organized into separate reports that can be quickly accessed by clicking on the report names in the table of contents on the left.

For drill-down and data feedback on your center’s cases, click on “VQI Case Appendix” in the table of contents on the left.
Important Notes

- All results are based on data entered into the VQI as of January 31, 2021. Any subsequent changes or updates to data after that date will not be reflected in this report.
- Procedure timeframes and inclusion/exclusion criteria are given at the top of each report. Cases are also excluded if outcomes are missing or not enough data was entered to determine whether the case met inclusion/exclusion criteria.
- Regions must have at least 3 centers with included cases for regional results to be displayed in tables and line charts.
- Regions must have at least 3 centers with at least 10 included cases per center for regional results to be displayed in bar charts. It is therefore possible for a region’s results to be displayed in tables and line charts, but not in bar charts.
- For risk-adjusted reports, regions must have at least 3 centers with at least 10 complete cases per center for regional results to be displayed in bar charts. It is therefore possible for a region’s results to be displayed in tables and line charts, but not in bar charts.
- In all graphics, "**" indicates a p-value <.05.
Dashboard

The dashboard provides a high-level summarization of your center’s results for each of 25 reports, and gives both regional and VQI-wide benchmarks for comparison. The “Your Center” column gives the percentage of your center’s cases with the noted outcome. Numbers in parentheses give the number of cases with the outcome and the total number of cases meeting the inclusion criteria for that report. The “Your Region” and “VQI Overall” columns give the overall, aggregate percentage of cases with the noted outcome, as well as the 25th, 50th (median), and 75th percentiles, for centers in your region and VQI, respectively ([25th|50th|75th]). Your center’s results are highlighted blue if your center is in the “best” 25th percentile for VQI Overall, and coral if your center is in the “worst” 25th percentile for VQI Overall.

For details on a particular report, click on the report name in the table of contents on the left.

Legend: Blue = “Best” 25th percentile  Coral = “Worst” 25th percentile

Note that procedure volume results are not highlighted
Dashboard Highlights

• New Colors

Legend: Blue = “Best” 25th percentile  Coral = “Worst” 25th percentile

• New procedure groupings

• New Case Appendix with...
• Embedded drill-down and data feedback

VQI Case Appendix

Winter 2020

About the Appendix

The VQI Case Appendix provides embedded data feedback and drill-down for each dashboard report. Using the appendix, centers can easily identify and download cases that were reviewed or excluded from each report, as well as cases with each noted outcome.

The interactive tables below give your center’s cases (both reviewed and excluded) entered for the procedure timeframe of each report (as of 11/30/2020). Each row references a particular case and each case is referenced by a PRIMPROCID, a unique case identifier assigned to each procedure to protect patient identity. Additional data elements are included for each case to further facilitate quality improvement efforts, including procedure and patient characteristics, length-of-stay (LOS) data, discharge medication data, complication data, and other data elements related to dashboard report construction.

To download a .csv or .xlsx file containing your center’s data, click on either the “CSV” or “Excel” buttons located above each interactive table.
Dashboard Highlights

- Embedded drill-down and data feedback

### INFRA

<table>
<thead>
<tr>
<th>PRIMPROCID</th>
<th>In INFRA</th>
<th>In INFRA CLAUD</th>
<th>Indication Right</th>
<th>Indication Left</th>
<th>Side Treated</th>
<th>Postop LOS</th>
<th>Total LOS</th>
<th>Discharge Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td></td>
<td>Not Treated</td>
<td>Tissue Loss</td>
<td>L</td>
<td>4</td>
<td>7</td>
<td>Home</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td></td>
<td>Not Treated</td>
<td>Tissue Loss</td>
<td>L</td>
<td>2</td>
<td>3</td>
<td>Home</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td></td>
<td>Not Treated</td>
<td>Tissue Loss</td>
<td>L</td>
<td>8</td>
<td>8</td>
<td>Rehab Unit</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td></td>
<td>Not Treated</td>
<td>Tissue Loss</td>
<td>L</td>
<td>12</td>
<td>12</td>
<td>Rehab Unit</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td></td>
<td>Not Treated</td>
<td>Claudication</td>
<td>L</td>
<td>2</td>
<td>2</td>
<td>Home</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td></td>
<td>Not Treated</td>
<td>Claudication</td>
<td>L</td>
<td>2</td>
<td>2</td>
<td>Home</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td></td>
<td>Tissue Loss</td>
<td>Tissue Loss</td>
<td>R</td>
<td>13</td>
<td>13</td>
<td>Rehab Unit</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td></td>
<td>Tissue Loss</td>
<td>Not Treated</td>
<td>R</td>
<td>5</td>
<td>15</td>
<td>Rehab Unit</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td></td>
<td>Not Treated</td>
<td>Acute Ischemia</td>
<td>L</td>
<td>5</td>
<td>7</td>
<td>Home</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td></td>
<td>Rest Pain</td>
<td>Not Treated</td>
<td>R</td>
<td>2</td>
<td>2</td>
<td>Rehab Unit</td>
</tr>
</tbody>
</table>

- # of INFRA cases in procedure timeframe
- # of INFRA cases included in each INFRA dashboard
- # of INFRA cases not included in either INFRA dashboard (note: 5+9+66=80)

- Change the # of rows for display (10,25,50,100,250, or 500)
- Binary indicators for dashboard inclusion (1=yes, 0=no)
- Use scroll bar to see additional variables
- Download .csv or .xlsx file of your data
- Returns every row containing at least 1 cell satisfying the value entered in the search bar (not incredibly useful)
- Sort on any column by clicking the double arrows
- Click to page thru your cases

Change the # of rows for display (10,25,50,100,250, or 500)

Binary indicators for dashboard inclusion (1=yes, 0=no)

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Returns every row containing at least 1 cell satisfying the value entered in the search bar (not incredibly useful)

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## Dashboard

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For details on a particular report, click on the report name in the table of contents on the left.

<table>
<thead>
<tr>
<th>Procedure Group</th>
<th>Outcome</th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>Procedure Volume</td>
<td>77.3% [40%</td>
<td>86%</td>
<td>92%]</td>
</tr>
<tr>
<td>Procedure Volume, All Years</td>
<td></td>
<td>[37</td>
<td>120</td>
<td>1560]</td>
</tr>
<tr>
<td>Multiple</td>
<td>Long-Term Follow-up</td>
<td>87.9% [85%</td>
<td>91%</td>
<td>100%]</td>
</tr>
<tr>
<td></td>
<td>Discharge Medications</td>
<td>0% [0%</td>
<td>0%</td>
<td>0%]</td>
</tr>
<tr>
<td>TFEM CAS ASYMPC Stroke/Death</td>
<td>4.7% [0%</td>
<td>0%</td>
<td>1%]</td>
<td>4.8% [0%</td>
</tr>
<tr>
<td>TFEM CAS SYMPP Stroke/Death</td>
<td>0% [0%</td>
<td>0%</td>
<td>0%]</td>
<td>1.4% [0%</td>
</tr>
<tr>
<td>TCAR ASYMPC Stroke/Death</td>
<td>0% [0%</td>
<td>0%</td>
<td>0%]</td>
<td>2.1% [0%</td>
</tr>
<tr>
<td>TCAR SYMPP Stroke/Death</td>
<td>0% [0%</td>
<td>0%</td>
<td>0%]</td>
<td>0.5% [0%</td>
</tr>
<tr>
<td>CEA ASYMPC Stroke/Death</td>
<td>1.9% [0%</td>
<td>0%</td>
<td>0%]</td>
<td>1.8% [0%</td>
</tr>
<tr>
<td></td>
<td>Postop LOS&gt;1 Day</td>
<td>22.6% [12%</td>
<td>18%</td>
<td>28%]</td>
</tr>
<tr>
<td></td>
<td>Stroke/Death</td>
<td>3.1% [0%</td>
<td>0%</td>
<td>3%]</td>
</tr>
<tr>
<td>CEA SYMPP Stroke/Death</td>
<td>42.9% [20%</td>
<td>37%</td>
<td>49%]</td>
<td>42.4% [24%</td>
</tr>
<tr>
<td>EVAR</td>
<td>Postop LOS&gt;2 Days</td>
<td>21.2% [14%</td>
<td>23%</td>
<td>33%]</td>
</tr>
<tr>
<td>Sac Diameter Reporting</td>
<td>72.1% [52%</td>
<td>61%</td>
<td>89%]</td>
<td>59.3% [33%</td>
</tr>
<tr>
<td>SVS Sac Size Guideline</td>
<td>75.8% [65%</td>
<td>79%</td>
<td>91%]</td>
<td>74.2% [66%</td>
</tr>
<tr>
<td>TEVAR</td>
<td>Sac Diameter Reporting</td>
<td>69.8% [53%</td>
<td>69%</td>
<td>73%]</td>
</tr>
<tr>
<td>OAAA In-Hospital Mortality</td>
<td>3.1% [0%</td>
<td>3%</td>
<td>5%]</td>
<td>4.6% [0%</td>
</tr>
<tr>
<td>SVS Cell-Saver Guideline</td>
<td>92.1% [70%</td>
<td>90%</td>
<td>99%]</td>
<td>92.5% [97%</td>
</tr>
<tr>
<td>SVS Iliac Inflow Guideline</td>
<td>96.6% [100%</td>
<td>100%</td>
<td>100%]</td>
<td>98.1% [100%</td>
</tr>
<tr>
<td>PVI CLAUD</td>
<td>ABI/Toe Pressure</td>
<td>91.4% [92%</td>
<td>94%</td>
<td>98%]</td>
</tr>
<tr>
<td>INFRA CLITI</td>
<td>Major Compilcations</td>
<td>4.1% [0%</td>
<td>4%</td>
<td>5%]</td>
</tr>
<tr>
<td>SUPRA CLITI</td>
<td>Major Compilcations</td>
<td>8.1% [3%</td>
<td>10%</td>
<td>14%]</td>
</tr>
<tr>
<td>LEAMP</td>
<td>Postop Complications</td>
<td>NA (&lt;3 centers)</td>
<td>10.7% [5%</td>
<td>10%</td>
</tr>
<tr>
<td>HDA</td>
<td>Primary AVF vs. Graft</td>
<td>82.7% [80%</td>
<td>82%</td>
<td>90%]</td>
</tr>
<tr>
<td>IVCF</td>
<td>Filter Retrieval Reporting</td>
<td>77.9% [59%</td>
<td>60%</td>
<td>70%]</td>
</tr>
</tbody>
</table>

Legend: Blue = “Best” 25th percentile  Coral = “Worst” 25th percentile

Note that procedure volume results are not highlighted.
Procedure Volume by Center in Your Region (Jan-Dec 2020)

Other centers in your region ▲ Your center

Centers (centers with <10 cases not shown)

Procedure Volume Across VQI (Jan-Dec 2020)

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

“Others” indicates centers that do not belong to a regional group.
# Procedure Volume, All Years

Includes all procedures with procedure date through December 31, 2020

Number of cases entered into the VQI, by registry and overall

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Your Center (N)</th>
<th>Your Region (N)</th>
<th>VQI Overall (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS (TFEM CAS &amp; TCAR)</td>
<td></td>
<td>3732</td>
<td>49828</td>
</tr>
<tr>
<td>CEA</td>
<td></td>
<td>10131</td>
<td>150058</td>
</tr>
<tr>
<td>EVAR</td>
<td></td>
<td>3229</td>
<td>59655</td>
</tr>
<tr>
<td>HDA</td>
<td></td>
<td>3290</td>
<td>59322</td>
</tr>
<tr>
<td>INFRA</td>
<td></td>
<td>3586</td>
<td>64165</td>
</tr>
<tr>
<td>IVCF</td>
<td></td>
<td>2007</td>
<td>15055</td>
</tr>
<tr>
<td>LEAMP</td>
<td>NA (&lt;3 centers)</td>
<td>19810</td>
<td></td>
</tr>
<tr>
<td>OAAA</td>
<td></td>
<td>1144</td>
<td>14321</td>
</tr>
<tr>
<td>PVI</td>
<td></td>
<td>15912</td>
<td>251233</td>
</tr>
<tr>
<td>SUPRA</td>
<td></td>
<td>1499</td>
<td>20722</td>
</tr>
<tr>
<td>TEVAR</td>
<td></td>
<td>1012</td>
<td>19158</td>
</tr>
<tr>
<td>Varicose Veins</td>
<td>NA (&lt;3 centers)</td>
<td>42963</td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td>46840</td>
<td>766290</td>
</tr>
</tbody>
</table>
Procedure Volume by Center in Your Region (Through Dec 2020)

- Other centers in your region
- Your center

Centers (centers with <10 cases not shown)

Procedure Volume Across VQI (Through Dec 2020)

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

“Others” indicates centers that do not belong to a regional group.
Physician Specialties

Physician Specialties Across VQI (as of January 31, 2021, N=5617 Physicians)
Physician Specialties Across Your Region (as of January 31, 2021, N=310 Physicians)
Long-Term Follow-up

Procedures performed between January 1 and December 31, 2018

Includes CAS (TFEM CAS and TCAR), CEA, EVAR, HDA, INFRA, IVCF, LEAMP, OAAA, PVI, SUPRA, and TEVAR procedures only. Excludes cases not eligible for long-term follow-up.

The table below gives the number of procedures meeting the inclusion criteria, and the percentage of those procedures with follow-up recorded between 9 and 21 months post-procedure.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>615 (72%)</td>
<td>7782 (64%)</td>
<td></td>
</tr>
<tr>
<td>CEA</td>
<td>1339 (81%)</td>
<td>18807 (71%)</td>
<td></td>
</tr>
<tr>
<td>EVAR</td>
<td>432 (84%)</td>
<td>7327 (72%)</td>
<td></td>
</tr>
<tr>
<td>HDA</td>
<td>NA (&lt;3 centers)</td>
<td>8010 (67%)</td>
<td></td>
</tr>
<tr>
<td>INFRA</td>
<td>539 (75%)</td>
<td>7339 (72%)</td>
<td></td>
</tr>
<tr>
<td>IVCF</td>
<td>302 (94%)</td>
<td>2003 (77%)</td>
<td></td>
</tr>
<tr>
<td>LEAMP</td>
<td>NA (&lt;3 centers)</td>
<td>3309 (66%)</td>
<td></td>
</tr>
<tr>
<td>OAAA</td>
<td>153 (89%)</td>
<td>1251 (75%)</td>
<td></td>
</tr>
<tr>
<td>PVI</td>
<td>2746 (75%)</td>
<td>34936 (70%)</td>
<td></td>
</tr>
<tr>
<td>SUPRA</td>
<td>255 (79%)</td>
<td>2359 (72%)</td>
<td></td>
</tr>
<tr>
<td>TEVAR</td>
<td>116 (92%)</td>
<td>2684 (69%)</td>
<td></td>
</tr>
<tr>
<td>Overall (Jan-Dec 2018)</td>
<td>6935 (77%)</td>
<td>95807 (70%)</td>
<td></td>
</tr>
<tr>
<td>Overall (Jan-Dec 2017)</td>
<td>7309 (77%)</td>
<td>86744 (73%)</td>
<td></td>
</tr>
</tbody>
</table>
Long-Term Follow-Up by Center in Your Region (Jan-Dec 2018)

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

Long-Term Follow-Up by Region Across VQI (Jan-Dec 2018)

*** indicates region's rate differs significantly from the VQI rate.
Discharge Medications

Procedures performed between January 1 and December 31, 2020

Includes CAS (TFEM CAS and TCAR), CEA, EVAR, INFRA, LEAMP, OAAA, PVI, SUPRA, and TEVAR procedures only. Antiplatelet is defined as ASA or P2Y12 inhibitor. Cases are excluded if (1) Discharge Statin = “No, for medical reason” OR (2) Both Discharge ASA = “No, for medical reason” AND Discharge P2Y12 inhibitor = “No, for medical reason” OR (3) An in-hospital death occurred.

The table below gives the number of procedures meeting the inclusion criteria, and the percentage of those procedures where patients received discharge medications.

<table>
<thead>
<tr>
<th></th>
<th>Number of Procedures at Your Center</th>
<th>Antiplatelet+Statin</th>
<th>Antiplatelet Only</th>
<th>Statin Only</th>
<th>Neither</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFRA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEAMP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OAAA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUPRA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEVAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your Center Overall</td>
<td></td>
<td>6505</td>
<td>88%</td>
<td>8%</td>
<td>2%</td>
</tr>
<tr>
<td>Your Region Overall</td>
<td></td>
<td>6505</td>
<td>88%</td>
<td>8%</td>
<td>2%</td>
</tr>
<tr>
<td>VQI Overall</td>
<td></td>
<td>81735</td>
<td>85%</td>
<td>9%</td>
<td>4%</td>
</tr>
</tbody>
</table>
**Discharge Antiplatelet+Statin by Center in Your Region (Jan-Dec 2020)**

*Other centers in your region* vs. *Your center*

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

**Discharge Antiplatelet+Statin by Region Across VQI (Jan-Dec 2020)**

*Others* indicates centers that do not belong to a regional group.

***Indicates region’s rate differs significantly from the VQI rate.*
TFEM CAS ASYMP: Stroke/Death

Procedures performed between January 1 and December 31, 2020

Includes asymptomatic admissions for Transfemoral Carotid Artery Stenting (TFEM CAS) only. Asymptomatic admissions are admissions where the patient had no ipsilateral or contralateral retinal or cortical TIA or stroke within 180 days prior to surgery. Excludes any patient with prior vertebrobasilar TIA or stroke, prior ipsilateral CAS, CAS for intracranial treatment, or any procedure involving dissection, trauma, FMD, or “Other” lesion types. Procedures with an approach other than “Femoral” are also excluded.

The table below gives the number of TFEM CAS procedures (performed on asymptomatic admissions) meeting the inclusion criteria, and the observed and expected rates of in-hospital stroke or death for those cases.

<table>
<thead>
<tr>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of TFEM CAS procedures meeting inclusion criteria</td>
<td>157</td>
<td>1338</td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td>0%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>151</td>
<td>1224</td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td>0%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Expected rate of stroke or death among cases with complete data</td>
<td>1.4%</td>
<td>NA</td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.28</td>
<td>NA</td>
</tr>
</tbody>
</table>

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

Rates shown are observed rates among cases meeting inclusion criteria.
Stroke or Death after TFEM CAS for Asymptomatic Admissions in Your Region (Jan-Dec 2020)

- Other centers in your region
- Your center

- Observed
- Expected

Centers (centers with <10 complete cases not shown)

Rates shown are among complete cases. "***" indicates center’s observed rate differs significantly from its expected rate.

Stroke or Death after TFEM CAS for Asymptomatic Admissions by Region Across VQI (Jan-Dec 2020)

- Observed
- Expected

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

Rates shown are among complete cases. "***" indicates region’s observed rate differs significantly from its expected rate.
TFEM CAS SYMP: Stroke/Death

Procedures performed between January 1 and December 31, 2020

Includes symptomatic admissions for Transfemoral Carotid Artery Stenting (TFEM CAS) only. Symptomatic admissions are admissions where the patient had an ipsilateral or contralateral retinal or cortical TIA or stroke within 180 days prior to surgery. Excludes any patient with prior vertebrobasilar TIA or stroke, prior ipsilateral CAS, CAS for intracranial treatment, or any procedure involving dissection, trauma, FMD, or “Other” lesion types. Procedures with an approach other than “Femoral” are also excluded.

The table below gives the number of TFEM CAS procedures (performed on symptomatic admissions) meeting the inclusion criteria, and the observed and expected rates of in-hospital stroke or death for those cases.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of TFEM CAS procedures meeting inclusion criteria</td>
<td>193</td>
<td>1537</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td>4.7%</td>
<td>4.8%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>184</td>
<td>1434</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td>4.9%</td>
<td>4.9%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of stroke or death among cases with complete data</td>
<td>3.8%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.44</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.
Stroke or Death after TFEM CAS for Symptomatic Admissions by Year

Rates shown are observed rates among cases meeting inclusion criteria.
Stroke or Death after TFEM CAS for Symptomatic Admissions in Your Region (Jan-Dec 2020)

Centers with <10 complete cases not shown.

Rates shown are among complete cases. *** indicates center's observed rate differs significantly from its expected rate.

Stroke or Death after TFEM CAS for Symptomatic Admissions by Region Across VQI (Jan-Dec 2020)

Regions with <3 centers with at least 10 complete cases not shown.

Rates shown are among complete cases. *** indicates region's observed rate differs significantly from its expected rate.
TCAR ASYMP: Stroke/Death

Procedures performed between January 1 and December 31, 2020

Includes asymptomatic admissions for TransCarotid Artery Revascularization (TCAR) only. Asymptomatic admissions are admissions where the patient had no ipsilateral or contralateral retinal or cortical TIA or stroke within 180 days prior to surgery. Excludes any patient with prior vertebrobasilar TIA or stroke, prior ipsilateral CAS, CAS for intracranial treatment, or any procedure involving dissection, trauma, FMD, or “Other” lesion types.

The table below gives the number of TCAR procedures (performed on asymptomatic admissions) meeting the inclusion criteria, and the observed and expected rates of in-hospital stroke or death for those cases.

<table>
<thead>
<tr>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of TCAR procedures meeting inclusion criteria</td>
<td>198</td>
<td>4068</td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td>0%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>193</td>
<td>3864</td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td>0%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Expected rate of stroke or death among cases with complete data</td>
<td>1.2%</td>
<td>NA</td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.18</td>
<td>NA</td>
</tr>
</tbody>
</table>

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

Rates shown are observed rates among cases meeting inclusion criteria.
Stroke or Death after TCAR for Asymptomatic Admissions in Your Region (Jan-Dec 2020)

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

Centers (centers with <10 complete cases not shown)

Rates shown are among complete cases. ** indicates center’s observed rate differs significantly from its expected rate.

Stroke or Death after TCAR for Asymptomatic Admissions by Region Across VQI (Jan-Dec 2020)


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

Rates shown are among complete cases. *** indicates region’s observed rate differs significantly from its expected rate.
TCAR SYMP: Stroke/Death

Procedures performed between January 1 and December 31, 2020

Includes symptomatic admissions for TransCarotid Artery Revascularization (TCAR) only. Symptomatic admissions are admissions where the patient had an ipsilateral or contralateral retinal or cortical TIA or stroke within 180 days prior to surgery. Excludes any patient with prior vertebrobasilar TIA or stroke, prior ipsilateral CAS, CAS for intracranial treatment, or any procedure involving dissection, trauma, FMD, or “Other” lesion types.

The table below gives the number of TCAR procedures (performed on symptomatic admissions) meeting the inclusion criteria, and the observed and expected rates of in-hospital stroke or death for those cases.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of TCAR procedures meeting inclusion criteria</td>
<td></td>
<td>69</td>
<td>2138</td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td></td>
<td>0%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td></td>
<td>65</td>
<td>2039</td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td></td>
<td>0%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Expected rate of stroke or death among cases with complete data</td>
<td></td>
<td>2.1%</td>
<td>NA</td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td></td>
<td>0.65</td>
<td>NA</td>
</tr>
</tbody>
</table>

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

Rates shown are observed rates among cases meeting inclusion criteria.
Stroke or Death after TCAR for Symptomatic Admissions in Your Region (Jan-Dec 2020)

Centers (centers with <10 complete cases not shown)

Rates shown are among complete cases. "***" indicates center's observed rate differs significantly from its expected rate.

Stroke or Death after TCAR for Symptomatic Admissions by Region Across VQI (Jan-Dec 2020)

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

Rates shown are among complete cases. "***" indicates region's observed rate differs significantly from its expected rate.
CEA ASYMP: Stroke/Death

Procedures performed between January 1 and December 31, 2020

Includes asymptomatic admissions for Carotid Endarterectomy (CEA) only. Asymptomatic admissions are admissions where the patient had no ipsilateral retinal or cortical TIA or stroke within 180 days prior to surgery. Excludes any patient with prior vertebrobasilar or non-specific TIA or stroke, prior ipsilateral CEA or CAS, or any procedure with a concomitant CABG, proximal endovascular, distal endovascular, or “Other” arterial procedure.

The table below gives the number of CEA procedures (performed on asymptomatic admissions) meeting the inclusion criteria, and the observed and expected rates of in-hospital stroke or death for those cases.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of CEA procedures meeting inclusion criteria</td>
<td>698</td>
<td></td>
<td>8867</td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td>1%</td>
<td>0.9%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>675</td>
<td></td>
<td>8410</td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td>1%</td>
<td>0.9%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of stroke or death among cases with complete data</td>
<td>0.9%</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.
Stroke or Death after CEA for Asymptomatic Admissions by Year

Rates shown are observed rates among cases meeting inclusion criteria.
Stroke or Death after CEA for Asymptomatic Admissions in Your Region (Jan-Dec 2020)

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

Centers (centers with <10 complete cases not shown)

Rates shown are among complete cases. ** indicates center's observed rate differs significantly from its expected rate.

Stroke or Death after CEA for Asymptomatic Admissions by Region Across VQI (Jan-Dec 2020)

- Observed
- Expected

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

Rates shown are among complete cases. ** indicates region's observed rate differs significantly from its expected rate.
CEA SYMP: Stroke/Death

Procedures performed between January 1 and December 31, 2020

Includes symptomatic admissions for Carotid Endarterectomy (CEA) only. Symptomatic admissions are admissions where the patient had an ipsilateral retinal or cortical TIA or stroke within 180 days prior to surgery. Excludes any patient with prior vertebrobasilar or non-specific TIA or stroke, prior ipsilateral CEA or CAS, or any procedure with a concomitant CABG, proximal endovascular, distal endovascular, or "Other" arterial procedure.

The table below gives the number of CEA procedures (performed on symptomatic admissions) meeting the inclusion criteria, and the observed and expected rates of in-hospital stroke or death for those cases.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of CEA procedures meeting inclusion criteria</td>
<td>324</td>
<td></td>
<td>4593</td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td>3.1%</td>
<td>1.8%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>319</td>
<td></td>
<td>4416</td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td>2.8%</td>
<td>1.8%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of stroke or death among cases with complete data</td>
<td>1.8%</td>
<td></td>
<td>NA</td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.2</td>
<td></td>
<td>NA</td>
</tr>
</tbody>
</table>

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

Rates shown are observed rates among cases meeting inclusion criteria.
Stroke or Death after CEA for Symptomatic Admissions in Your Region (Jan-Dec 2020)

Centers (centers with <10 complete cases not shown)

Rates shown are among complete cases. "***" indicates center's observed rate differs significantly from its expected rate.

Stroke or Death after CEA for Symptomatic Admissions by Region Across VQI (Jan-Dec 2020)

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

Rates shown are among complete cases. "***" indicates region's observed rate differs significantly from its expected rate.
CEA ASYMPTOMATIC: Postop LOS>1 Day

Procedures performed between January 1 and December 31, 2020

Includes asymptomatic admissions for Carotid Endarterectomy (CEA) only. Asymptomatic admissions are admissions where the patient had no ipsilateral retinal or cortical TIA or stroke within 180 days prior to surgery. Excludes any patient with prior vertebrobasilar or non-specific TIA or stroke, prior ipsilateral CEA or CAS, or any procedure with a concomitant CABG, proximal endovascular, distal endovascular, or “Other” arterial procedure. Procedures where in-hospital death occurred with postoperative LOS<=1 day are also excluded. Postoperative LOS is based on the midnight rule used for hospital billing.

The table below gives the number of CEA procedures (performed on asymptomatic admissions) meeting the inclusion criteria, and the observed and expected rates of postoperative LOS>1 Day for those cases.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of CEA procedures meeting inclusion criteria</td>
<td>699</td>
<td>8867</td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;1 day among procedures meeting inclusion criteria</td>
<td>22.6%</td>
<td>22.7%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>677</td>
<td>8427</td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;1 day among cases with complete data</td>
<td>22.7%</td>
<td>22.7%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of LOS&gt;1 day among cases with complete data</td>
<td>22.6%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.96</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.
Postop LOS>1 Day after CEA for Asymptomatic Admissions by Year

Rates shown are observed rates among cases meeting inclusion criteria.
CEA SYMP: Postop LOS>1 Day

Procedures performed between January 1 and December 31, 2020

Includes symptomatic admissions for Carotid Endarterectomy (CEA) only. Symptomatic admissions are admissions where the patient had an ipsilateral retinal or cortical TIA or stroke within 180 days prior to surgery. Excludes any patient with prior vertebrobasilar or non-specific TIA or stroke, prior ipsilateral CEA or CAS, or any procedure with a concomitant CABG, proximal endovascular, distal endovascular, or “Other” arterial procedure. Procedures where in-hospital death occurred with postoperative LOS<=1 day are also excluded. Postoperative LOS is based on the midnight rule used for hospital billing.

The table below gives the number of CEA procedures (performed on symptomatic admissions) meeting the inclusion criteria, and the observed and expected rates of postoperative LOS>1 Day for those cases.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of CEA procedures meeting inclusion criteria</td>
<td>324</td>
<td>4592</td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;1 day among procedures meeting inclusion criteria</td>
<td>42.9%</td>
<td>42.4%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>320</td>
<td>4430</td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;1 day among cases with complete data</td>
<td>42.8%</td>
<td>42.3%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of LOS&gt;1 day among cases with complete data</td>
<td>44.8%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.5</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.
Postop LOS > 1 Day after CEA for Symptomatic Admissions by Year

Rates shown are observed rates among cases meeting inclusion criteria.
EVAR: Postop LOS>2 Days

Procedures performed between January 1 and December 31, 2020

Includes Endovascular AAA Repair (EVAR) procedures only. Excludes any procedure with ruptured aneurysm. Procedures where in-hospital death occurred with postoperative LOS≤2 are also excluded. Postoperative LOS is based on the midnight rule used for hospital billing.

The table below gives the number of EVAR procedures meeting the inclusion criteria, and the observed and expected rates of postoperative LOS>2 Days 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 EVAR procedures meeting inclusion criteria</td>
<td>401</td>
<td>6032</td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;2 days among procedures meeting inclusion criteria</td>
<td>21.2%</td>
<td>16.6%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>353</td>
<td>5450</td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;2 days among cases with complete data</td>
<td>20.7%</td>
<td>16.7%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of LOS&gt;2 days among cases with complete data</td>
<td>16.6%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.05</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.
Postop LOS>2 Days after EVAR by Year

Rates shown are observed rates among cases meeting inclusion criteria.
EVAR: Sac Diameter Reporting

Procedures performed between January 1 and December 31, 2018
Includes Endovascular AAA Repair (EVAR) procedures only. Excludes patients who were converted to open or died within 21 months of surgery.

The table below gives the number of EVAR procedures meeting the inclusion criteria, and the percentage of those procedures where a sac diameter was reported between 9 and 21 months post-procedure.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of EVAR procedures meeting inclusion criteria</td>
<td>401</td>
<td>6782</td>
<td></td>
</tr>
<tr>
<td>Percentage with sac diameter reported between 9 and 21 months post-procedure</td>
<td>72.1%</td>
<td>59.3%</td>
<td></td>
</tr>
</tbody>
</table>
EVAR Sac Diameter Reporting in Your Region (Jan-Dec 2018)

- Other centers in your region
- Your center

Centers (centers with <10 cases not shown)

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

EVAR Sac Diameter Reporting by Region Across VQI (Jan-Dec 2018)

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

*** Indicates region’s rate differs significantly from the VQI rate.
Moving The Needle

National Quality Initiative – EVAR Sac Diameter Report
• Wide Variation in Compliance – VQI Mean 58.6% (22-89%)
• Little improvement since inception in 2016

“It is the obligation of the operating surgeon to stress the need for lifelong surveillance and integrate discussions about LTFU into all stages of AAA EVAR care to ensure that their patients achieve optimal outcomes.” – Salvatore Scali, MD, Professor of Surgery, University of Florida.

Barriers to Reporting
• No LTFU; patient lost to evaluation
• Patient Factors
  ▪ No Need, “Feeling Well”
  ▪ Unaware of importance of LTFU and imaging
  ▪ Moved/phone disconnected
  ▪ Lost insurance
  ▪ Too far to travel/inconvenient parking
Moving The Needle

Other Barriers

- Dictated Patient Visit with “AAA sac unchanged” or “No endoleak or size increase”
- Imaging not available at time of visit
- Center not wanting to use Radiology report information

Discussion

Suggestions for improvement:

- Center unblinding at Regional meetings → Peer competition
- Biannual Physician Report sent with PRIMPROCID information
- GC Update Report from each Regional Medical Director to maintain awareness
- “Best Practice” Webinar made available for low performing centers
- Make Sac Diameter size notation at every patient encounter
EVAR: SVS Sac Size Guideline

Procedures performed between January 1 and December 31, 2020

Includes Endovascular AAA Repair (EVAR) procedures only. Excludes any non-elective procedure. SVS sac size guideline is ≥5 cm for Women and ≥5.5cm for men. If the patient has any iliac aneurysm, the guideline is considered met regardless of AAA diameter.

The table below gives the number of EVAR procedures meeting the inclusion criteria, and the percentage of those procedures meeting the SVS sac size guideline.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of EVAR procedures meeting inclusion criteria</td>
<td>359</td>
<td>5357</td>
<td></td>
</tr>
<tr>
<td>Percentage meeting SVS sac size guideline</td>
<td>75.8%</td>
<td>74.2%</td>
<td></td>
</tr>
</tbody>
</table>
**EVAR Sac Size Guideline in Your Region (Jan-Dec 2020)**

- Other centers in your region
- Your center

**Centers (centers with <10 cases not shown)**

---

**EVAR Sac Size Guideline by Region Across VQI (Jan-Dec 2020)**

- Michigan
- Mid-Atlantic
- Canada
- Up. Midwest
- New England
- Carolinas
- G. Lakes
- Rocky Mtn.
- Vqi
- Pacific NW
- New York
- SOLONet
- Mid South
- Midwest
- Virginia
- South East
- So. Cal.

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

---

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

**Indicates region’s rate differs significantly from the VQI rate.**
TEVAR: Sac Diameter Reporting

Procedures performed between January 1 and December 31, 2018

Includes Thoracic Endovascular Aortic Repair (TEVAR) procedures for aneurysm or aneurysm from dissection only. Excludes cases where no aortic device was implanted or patients who were converted to open or died within 21 months of surgery.

The table below gives the number of TEVAR procedures meeting the inclusion criteria, and the percentage of those procedures where a sac diameter was reported between 9 and 21 months post-procedure.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of TEVAR procedures meeting inclusion criteria</td>
<td>63</td>
<td>1454</td>
<td></td>
</tr>
<tr>
<td>Percentage with sac diameter reported between 9 and 21 months post-procedure</td>
<td>69.8%</td>
<td>59.8%</td>
<td></td>
</tr>
</tbody>
</table>
TEVAR Sac Diameter Reporting in Your Region (Jan-Dec 2018)

Centers (centers with <10 cases not shown)

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

TEVAR Sac Diameter Reporting by Region Across VQI (Jan-Dec 2018)

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

*** Indicates region's rate differs significantly from the VQI rate.
# OAAA: In-Hospital Mortality

Procedures performed between January 1 and December 31, 2020
Includes Open AAA (OAAA) procedures only. Excludes any patient with a ruptured aneurysm.

The table below gives the number of OAAA procedures meeting the inclusion criteria, and the observed and expected rates of in-hospital death for those cases.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of OAAA procedures meeting inclusion criteria</td>
<td>131</td>
<td>1044</td>
<td></td>
</tr>
<tr>
<td>Observed rate of In-Hospital Mortality among procedures meeting inclusion criteria</td>
<td>3.1%</td>
<td>4.6%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>129</td>
<td>977</td>
<td></td>
</tr>
<tr>
<td>Observed rate of In-Hospital Mortality among cases with complete data</td>
<td>3.1%</td>
<td>4.4%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of In-Hospital Mortality among cases with complete data</td>
<td>4.1%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.82</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.
In-Hospital Death after OAAA by Year

Rates shown are observed rates among cases meeting inclusion criteria.
OAAA: SVS Cell-Saver Guideline

Procedures performed between January 1 and December 31, 2020

Includes Open AAA (OAAA) procedures only. Excludes any patient with EBL ≤ 500 ml. SVS cell-saver guideline is met if cell salvage or ultrafiltration device was used.

The table below gives the number of OAAA procedures meeting the inclusion criteria, and the percentage of those procedures meeting the SVS cell-saver guideline.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of OAAA procedures meeting inclusion criteria</td>
<td>127</td>
<td>1063</td>
<td></td>
</tr>
<tr>
<td>Percentage meeting SVS cell-saver guideline</td>
<td>92.1%</td>
<td>92.5%</td>
<td></td>
</tr>
</tbody>
</table>
OAAA Cell-Saver Guideline in Your Region (Jan-Dec 2020)

Centers (centers with <10 cases not shown)

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

OAAA Cell-Saver Guideline by Region Across VQI (Jan-Dec 2020)

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

*** indicates region’s rate differs significantly from the VQI rate.
OAAA: SVS Iliac Inflow Guideline

Procedures performed between January 1 and December 31, 2020
Includes Open AAA (OAAA) procedures only. SVS iliac inflow guideline is met if preservation of flow was maintained to at least one internal iliac artery.

The table below gives the number of OAAA procedures meeting the inclusion criteria, and the percentage of those procedures meeting the SVS iliac inflow guideline.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of OAAA procedures meeting inclusion criteria</td>
<td>147</td>
<td>1176</td>
<td></td>
</tr>
<tr>
<td>Percentage meeting SVS iliac inflow guideline</td>
<td>98.6%</td>
<td>98.1%</td>
<td></td>
</tr>
</tbody>
</table>
OAAA Iliac Inflow Guideline in Your Region (Jan-Dec 2020)

Centers (centers with <10 cases not shown)

OAAA Iliac Inflow Guideline by Region Across VQI (Jan-Dec 2020)

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

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

*** Indicates region's rate differs significantly from the VQI rate.
PVI CLAUD: ABI/Toe Pressure

Procedures performed between January 1 and December 31, 2020
Includes Peripheral Vascular Intervention (PVI) procedures for mild, moderate, or severe claudication only. “ABI/Toe Pressure Assessment” indicates at least one ABI or toe pressure assessment was made prior to PVI for the side of the procedure, or on both sides for bilateral and aortic procedures.

The table below gives the number of PVI procedures meeting the inclusion criteria, and the percentage of those procedures in which an ABI or toe pressure was assessed prior to PVI.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of PVI procedures meeting inclusion criteria</td>
<td></td>
<td>806</td>
<td>12455</td>
</tr>
<tr>
<td>Percentage with ABI/toe pressure assessment</td>
<td></td>
<td>91.4%</td>
<td>74.5%</td>
</tr>
</tbody>
</table>
**ABI/Toe Pressure Assessment before PVI for Claudication in Your Region (Jan-Dec 2020)**

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

---

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

---

**ABI/Toe Pressure Assessment before PVI for Claudication by Region Across VQI (Jan-Dec 2020)**

- **G. Lakes**
- **Western**
- **Mid-America**
- **Carolina**
- **Nor. Cal.**
- **Canada**
- **MidSouth**
- **Michigna**
- **SoVONet**
- **Midwest**
- **VQI**
- **Up Midwest**
- **New England**
- **So. Cal.**
- **Rocky Mtns.**
- **New York**
- **Southeast**

---

*** Indicates region’s rate differs significantly from the VQI rate.
INFRA CLTI: Major Complications

Procedures performed between January 1 and December 31, 2020

Includes Infrainguinal Bypass (INFRA) procedures for rest pain, tissue loss, or acute ischemia. Major complications are defined as in-hospital death, ipsilateral BK or AK amputation, or graft occlusion.

The table below gives the number of INFRA procedures meeting the inclusion criteria, and the percentage of those procedures that resulted in in-hospital death, ipsilateral BK or AK amputation, or graft occlusion.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of INFRA procedures meeting inclusion criteria</td>
<td>518</td>
<td>5212</td>
<td></td>
</tr>
<tr>
<td>Percentage with major complications</td>
<td>4.1%</td>
<td>4.6%</td>
<td></td>
</tr>
</tbody>
</table>
Major Complications after INFRA for CLTI in Your Region (Jan-Dec 2020)

Other centers in your region  Your center

Centers (centers with <10 cases not shown)

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

Major Complications after INFRA for CLTI by Region Across VQI (Jan-Dec 2020)


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

*** Indicates region’s rate differs significantly from the VQI rate.
SUPRA CLTI: Major Complications

Procedures performed between January 1 and December 31, 2020

Includes Suprainguinal Bypass (SUPRA) procedures for rest pain, tissue loss, or acute ischemia. Major complications are defined as in-hospital death, ipsilateral BK or AK amputation, or graft occlusion.

The table below gives the number of SUPRA procedures meeting the inclusion criteria, and the percentage of those procedures that resulted in in-hospital death, ipsilateral BK or AK amputation, or graft occlusion.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of SUPRA procedures meeting inclusion criteria</td>
<td>160</td>
<td>1177</td>
<td></td>
</tr>
<tr>
<td>Percentage with major complications</td>
<td>8.1%</td>
<td>7.4%</td>
<td></td>
</tr>
</tbody>
</table>
**Major Complications after SUPRA for CLTI in Your Region (Jan-Dec 2020)**

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

<table>
<thead>
<tr>
<th>Centers (centers with &lt;10 cases not shown)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
</tr>
<tr>
<td>2%</td>
</tr>
<tr>
<td>4%</td>
</tr>
<tr>
<td>6%</td>
</tr>
<tr>
<td>8%</td>
</tr>
<tr>
<td>10%</td>
</tr>
<tr>
<td>12%</td>
</tr>
<tr>
<td>14%</td>
</tr>
<tr>
<td>16%</td>
</tr>
<tr>
<td>18%</td>
</tr>
</tbody>
</table>

**Major Complications after SUPRA for CLTI by Region Across VQI (Jan-Dec 2020)**

- **New England**
- **Mid-Atlantic**
- **Vaq**
- **G. Lake**
- **Carolinas**
- **Southeast**
- **Up. Midwest**

<table>
<thead>
<tr>
<th>Regions (regions with &lt;3 centers with at least 10 cases not shown)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
</tr>
<tr>
<td>2%</td>
</tr>
<tr>
<td>4%</td>
</tr>
<tr>
<td>6%</td>
</tr>
<tr>
<td>8%</td>
</tr>
<tr>
<td>10%</td>
</tr>
<tr>
<td>12%</td>
</tr>
</tbody>
</table>

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

*** Indicates region's rate differs significantly from the VQI rate.
LEAMP: Postop Complications

Procedures performed between January 1 and December 31, 2020

Includes Lower-Extremity Amputation (LEAMP) procedures only. Postoperative complications are defined as myocardial infarction, dysrhythmia, congestive heart failure, surgical site infection, renal complication, or respiratory complication.

The table below gives the number of LEAMP procedures meeting the inclusion criteria, and the percentage of those procedures that resulted in a postoperative complication.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of LEAMP procedures meeting inclusion criteria</td>
<td></td>
<td>NA (&lt;3 centers)</td>
<td>3184</td>
</tr>
<tr>
<td>Percentage with postoperative complications</td>
<td></td>
<td></td>
<td>10.7%</td>
</tr>
</tbody>
</table>
Postop Complications after LEAMP in Your Region (Jan-Dec 2020)

Centers (centers with <10 cases not shown)

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

Postop Complications after LEAMP by Region Across VQI (Jan-Dec 2020)

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

**** Indicates region’s rate differs significantly from the VQI rate.
HDA: Primary AVF vs. Graft

Procedures performed between January 1 and December 31, 2020
Includes Hemodialysis Access (HDA) procedures only. Excludes procedures where Access Type = Endo AVF or patients with a previous access procedure in the same arm.

The table below gives the number of HDA procedures meeting the inclusion criteria, and the percentage of those procedures that were primary AVF.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of HDA procedures meeting inclusion criteria</td>
<td></td>
<td>417</td>
<td>5069</td>
</tr>
<tr>
<td>Percentage with primary AVF</td>
<td></td>
<td>82.7%</td>
<td>81.7%</td>
</tr>
</tbody>
</table>
Primary AVF Access in Your Region (Jan-Dec 2020)

- Other centers in your region
- Your center

Centers (centers with <10 cases not shown)

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

Primary AVF Access by Region Across VQI (Jan-Dec 2020)

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

*** Indicates region's rate differs significantly from the VQI rate.
IVCF: Filter Retrieval Reporting

Procedures performed between January 1 and December 31, 2018

Includes Inferior Vena Cava Filter (IVCF) procedures only. Excludes filters with permanent planned duration, patients who have died since discharge, or patients where no follow-up was possible.

The table below gives the number of procedures meeting the inclusion criteria, and the percentage of those procedures in which the filter was reported as retrieved (or retrieval was attempted) at any time post-procedure. Because follow-up is critical for assessing filter retrieval, cases meeting the inclusion criteria are broken down into those with follow-up records (at least 1 follow-up record) and those without follow-up records.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of IVCF procedures meeting inclusion criteria</td>
<td>190</td>
<td>1224</td>
<td></td>
</tr>
<tr>
<td>Number without follow-up records</td>
<td>12</td>
<td>145</td>
<td></td>
</tr>
<tr>
<td>Number with follow-up records</td>
<td>178</td>
<td>1079</td>
<td></td>
</tr>
<tr>
<td>Percentage with Filter Retrieval, or Attempt at Retrieval</td>
<td>77.9%</td>
<td>59.7%</td>
<td></td>
</tr>
<tr>
<td>Percentage not retrieved because No Follow-up Records Created</td>
<td>6.3%</td>
<td>11.8%</td>
<td></td>
</tr>
<tr>
<td>Percentage not retrieved because Not Clinically Indicated</td>
<td>9.5%</td>
<td>18.8%</td>
<td></td>
</tr>
<tr>
<td>Percentage not retrieved because Patient Declined</td>
<td>3.2%</td>
<td>3.7%</td>
<td></td>
</tr>
<tr>
<td>Percentage not retrieved because Lost to Follow-Up</td>
<td>1.6%</td>
<td>2.5%</td>
<td></td>
</tr>
<tr>
<td>Percentage not retrieved because Deemed Too Late for Removal</td>
<td>0.5%</td>
<td>0.4%</td>
<td></td>
</tr>
<tr>
<td>Percentage not retrieved because Planned Later Removal</td>
<td>1.1%</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Percentage not retrieved because No Reason Given</td>
<td>0.5%</td>
<td>1.1%</td>
<td></td>
</tr>
</tbody>
</table>
IVC Filter Retrieval Reporting in Your Region (Jan-Dec 2018)

Centers (centers with <10 cases not shown)

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

IVC Filter Retrieval Reporting by Region Across VQI (Jan-Dec 2018)

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

*** indicates region’s rate differs significantly from the VQI rate.
Regional Improvement Projects

- Mohammad Eslami, MD
- John Moawad, MD
- Fedor Lurie, MD
- Michael Madigan, MD
National VQI Update:
Caroline Morgan
Clinical Associate, SVS PSO
Number of Participating Centers

Location of VQI Participating Centers

793 VQI Centers
792 centers in North America
1 center in Singapore
18 Regional Quality Groups

Canadian Vascular Quality Initiative

Michigan Vascular Study Group

Vascular Study Group of Greater New York

Great Lakes Vascular Study Group

Puerto Rico
**Total Procedures Captured (as of 4/1/2021)**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peripheral Vascular Intervention</td>
<td>268,305</td>
</tr>
<tr>
<td>Carotid Endarterectomy</td>
<td>155,339</td>
</tr>
<tr>
<td>Infra-Inguinal Bypass</td>
<td>67,658</td>
</tr>
<tr>
<td>Endovascular AAA Repair</td>
<td>63,014</td>
</tr>
<tr>
<td>Hemodialysis Access</td>
<td>62,927</td>
</tr>
<tr>
<td>Carotid Artery Stent</td>
<td>54,025</td>
</tr>
<tr>
<td>Varicose Vein</td>
<td>45,589</td>
</tr>
<tr>
<td>Supra-Inguinal Bypass</td>
<td>21,818</td>
</tr>
<tr>
<td>Thoracic and Complex EVAR</td>
<td>20,978</td>
</tr>
<tr>
<td>Lower Extremity Amputations</td>
<td>20,834</td>
</tr>
<tr>
<td>IVC Filter</td>
<td>15,710</td>
</tr>
<tr>
<td>Open AAA Repair</td>
<td>14,883</td>
</tr>
<tr>
<td>Vascular Medicine Consult</td>
<td>56</td>
</tr>
<tr>
<td>Venous Stent</td>
<td>29</td>
</tr>
</tbody>
</table>

**VQI Total Procedure Volume**

Total Procedure Volume tab reflects net procedures added to the registry for the month.
Trainee engagement:

- VQI wants to help medical students, residents and fellows learn about quality improvement.
Trainee engagement:

- Plans –
  - Invite students and trainees to regional and national meetings
  - Engage students and trainees in quality improvement projects
  - Participate in presentations and publications
  - VQI intern program (in development)
Trainee engagement:

- What are your ideas?
Update on PSO Diversity Committee

VQI Members call for volunteers early 2021:

• 19 Applicants
• VQI Representatives
  – Dr. Leila Mureebe – Chair
  – Dr. Carla Moreiro – Vice-Chair
  – Dr. Samantha Minc
  – Dr. Patricia Fernandez
  – Dr. Mina Boutros
  – Dr. Rafael Malgor
Update on PSO Diversity Committee

• Awaiting appointments from
  ➢ SVS DEI Committee
  ➢ AVF
  ➢ ACC

• Broad representation
  ➢ Years in practice
  ➢ Region
  ➢ Gender
  ➢ Race
As a Patient Safety Organization, we feel compelled to share Safety Notifications with VQI Members

- FDA will contact the SVS PSO with Safety Notifications it wants us to communicate
- Safety Notifications will appear in both the PSO and SVS newsletters
- All Safety Notifications are posted to the VQI and SVS Websites

https://www.vqi.org/resources/fda-communication/
The 2021 VQI Annual Meeting has been moved to August!

Important Dates and Times for the 2021 VQI Annual Meeting at VAM

August 17, 2021 12PM – 6:30PM* Pacific Time
August 18, 2021 8AM – 5PM Pacific Time

*Poster Presentation and Networking Reception – Tuesday, August 17th at 5:00PM to 6:30PM

We are hopeful that we will be able to have an in-person meeting at the San Diego Convention Center. In the event we are unable to meet live, we will transition to on-line presentation.
ACC and SVS joined forces in 2021 with a united vascular registry, creating a single resource focused on improving care and outcomes of patients with vascular disease.

ACC PVI registry participants who have not yet joined the SVS VQI may contact the SVS VQI account team by emailing vqi@m2s.com, or by calling 603-298-6717, to begin enrollment.
Ongoing Collaboration

• ACC NCDR will have representation on all VQI Councils and Committees
COVID-19 Update

- COVID-19 Variable insertion into registries (Sept. 2020)
- Two JVS Publications (JVS & JVSVL) on registry volumes
- AHRQ PSO Presentation on VQI Response
- International Registry submission for June issue *Seminars in Vascular Surgery*
- Initial Outcomes Review of COVID-19 effect in registries
- Collaboration with Vascular Surgery COVID-19 Collaborative (VASCC) on LTFU in participating centers
My Peripheral Arterial Disease: a VQI Pilot of Patient Reported Outcomes for PAD

- The Society for Vascular Surgery Vascular Quality Initiative is seeking practices to participate in My PAD, a pilot program for the collection of patient reported outcomes (PRO) on patients undergoing endovascular treatment for peripheral arterial disease (PAD).
- The VQI recognizes that traditional outcomes such as patency and reintervention may not fully capture the quality of care or the experience of PAD patients. There is a long overdue need to learn and measure the patient’s perspective.

- Must be in the PVI registry and have greater than 70% follow up! Not too late to join the Pilot!!
Reporting Highlights and Questions:

• New On-line Follow-up reports
  – EVAR Released - Jan 2021
  – CEA/CAS/PVI/TEVAR – To Be Released in 2021

• New Dashboard and Regional Report Drilldown

• Suggestions for “other” reports
CME/CE CREDIT FOR REGIONAL MEETINGS

SPRING 2021
### Successful Rollout

<table>
<thead>
<tr>
<th>Type of credit</th>
<th>Total of those who took survey and claimed Contact Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBON (Iowa Board of Nursing)</td>
<td>83</td>
</tr>
<tr>
<td>AMA (MD/DO)</td>
<td>75</td>
</tr>
<tr>
<td>CE (Others)</td>
<td>25</td>
</tr>
<tr>
<td>All</td>
<td>183</td>
</tr>
<tr>
<td>Approx. time to complete eval</td>
<td>6 min</td>
</tr>
<tr>
<td>31.4% of meeting attendees participated in the survey to receive 2.0 credit hours</td>
<td>183/582</td>
</tr>
</tbody>
</table>
Please describe any 'pearls' or takeaway messages:

• Identifying our areas of concern by comparison to others in our region and nationally is helpful toward setting priorities
• Other facilities are experiencing the same difficulties I am with data abstraction
• Excellent Meeting
• Good collaboration and networking with peers
• How important it is for my facility, not just the doctors, to have this information from the registry
• By sharing the report with benchmarks, our organization will identify quality improvements we can work on to improve patient outcomes
• Will look into doing more patient education
CME/CE Survey Results from Fall 2020

Barriers

- Lack of administrative support, Patient compliance issues
- Lack of resources/equipment
- MDs to give specific measurement in their notes
- Abstractions leave little time for QI projects
- COVID, patients traveling and receiving follow up elsewhere

How will you address these barriers?

- Look in to obtaining additional administrative organization and support
- Review operational definitions and email m2support for clarification
- Educate others at my location. Continue patient education and follow-up.
- Keep as organized as possible and enter patient information ASAP
- Work with IT to create template for follow-up office visits (to include key data points)
- Show cost savings of implementation
- Better communication with PCP
Des Moines University is the continuing education provider for this activity.

The attendance roster will be cross-referenced with those applying for CME/CE. Sign in correctly.

Each participant **MUST COMPLETE BOTH** the attendance attestation and the meeting evaluation from the URL site – one form.

You will have 7 days from the date of the meeting to complete the forms and **SUBMIT**.

Approximately 14 days from the meeting, Des Moines University will email you instructions on how to access your certificate.

PSO leadership is providing continuing education credit to you at no charge!

**If you do not complete and submit the online forms within 7 days, continuing education credit cannot be awarded.**
REMEmber to PSO:

• **P**UT your FULL NAME in RingCentral to get credit for attendance and CME/CE credit (no exceptions will be made)

• **S**END an email to [ljohnson@svspso.org](mailto:ljohnson@svspso.org) with names of group members that are sharing 1 device

• **O**FFICALLY apply for CME/CE credit by clicking this link:  
  [https://dmu.co1.qualtrics.com/jfe/form/SV_cSL4LqNBatpl5vE](https://dmu.co1.qualtrics.com/jfe/form/SV_cSL4LqNBatpl5vE)

You only have **7 days** to complete forms for CME/CE Credit.  
NO EMAIL WILL BE SENT AS A REMINDER OR WITH THE CME/CE LINK
Quality Improvement Update

Spring 2021
Quality Improvement Resources:

- 2021 Quarterly Webinars
  - March 2021
  - June 2021
  - September 2021
  - November/December 2021
  - Participation Award Information
- The VQI News
  - Provides updates on regulatory issues, technical updates, and crossover news from the SVS and SVN
- VQI Quality Improvement Newsletter
  - Focusing on QI processes, tools, and definitions
- VQI.org Members only pages
Update on Charters 2020 and 2021

- Fifty-eight (58) charters submitted in 2020!
  - LTFU – 14
  - D/C Medications – 17
  - Clinical – 3
  - *Documentation – 24
- *Multi-regional AAA size compliance project – 19 charter participants. 33 overall participants.
- 2021 – Twenty charters already!
- Focused phone calls are well attended – now on a quarterly schedule (Jan, April, July, Oct).
Putting VQI Data into Action
See what your colleagues are doing with QI

• Abstracts were submitted and acceptance notifications were sent out on March 1\textsuperscript{st}
• Planning on an in-person meeting in San Diego
• If needed, we will once again convert the meeting into an all-virtual format
• Incorporating some aspects of virtual online learning
• Posters that were accepted for 2020 were automatically accepted into the 2021 poster session without the need to resubmit
Charter participants become part of focused group calls

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

One on one calls, if requested
National QI project details

• Submit Project Charters and supporting documentation for presentations and posters to QI@SVSPSO.ORG or cjackson@svspso.org.

• Visit the VQI Members Only Website for sample charters, webinars, and presentations on VQI Quality Improvement Projects. www.vqi.org
2020 Participation Award
Changes
MAJOR CHANGE

• Long Term Follow-Up 2018 cases
  – COVID-19 affect
  – Remove LFTU from the 2020 Participation Award – BUT...
  – Acknowledge centers that maintained, improved LTFU with a certificate
    • Centers in top 25% for 2018 LTFU rates
    • Statistically significant increase in LTFU rate from 2017 to 2018
Scoring 2020 (During COVID-19)

• Three categories scored, each on a 0-6 point scale:
  o LTFU – REMOVED. Separate recognition.
  o Meeting attendance (*weighted 50%*)
  o QI project involvement (*weighted 40%*)
  o Number of registry subscriptions (*weighted 10%*)

• The final score is calculated as follows:
  Total points = 5 x Attendance score + 4 x QIP score + 1 x Registry score
Participation Awards Program

- 2020 Participation Award results to be announced soon.
- 3 Star recipients are presented at the in-person Annual VQI meeting.
- Participation Awards began in 2016 to encourage active participation in the registries program and recognize the importance of participation.
- Participating centers can earn up to three stars based on actions that lead to better patient care – more details available at [https://www.vqi.org/quality-improvement/participation-awards/](https://www.vqi.org/quality-improvement/participation-awards/)
GREAT LAKES VASCULAR STUDY GROUP
Participation Award Recognition

Allegheny Clinic Vascular Surgery
Riverside Methodist Hospital
Grant Medical Center
Doctors Hospital
Marion General Hospital
Grady Memorial Hospital
Summa Health System
Metro Health Medical Center
Mansfield Hospital

UPP Vascular Surgery
Wexner Medical Center
Westmoreland Regional Hospital

Cleveland Clinic
ProMedica Toledo Hospital
LTFU Recognition

- Cleveland Clinic
- Allegheny Clinic Vascular Surgery
- Riverside Methodist Hospital
- Doctors Hospital
- Grady Memorial Hospital
- Mansfield Hospital
- Westmoreland Regional Hospital
- Good Samaritan Hospital
- Bethesda North Hospital
Arterial Quality Council:
John Moawad, MD
AQC Update:

Chair: Randy DeMartino, MD (Mayo)
Vice Chair: Jessica Simons, MD (UMASS)
Kelly Byrnes & Marguerite Marlow,
Vascular Ultrasound representatives
ACC to make 2 appointments mid 2021
AQC Update:

Preliminary Development priorities for 2021:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Infra/Supra - Jess Simons</td>
</tr>
<tr>
<td>2.</td>
<td>OAAA - Rumi Faizer</td>
</tr>
<tr>
<td>3.</td>
<td>Amputation - Ahmed Abou-Zamzam</td>
</tr>
</tbody>
</table>

Always looking for Volunteers to Join Registry Committees! Contact Carrie Bosela C.Bosela@svspso.org if interested!!
AQC Update:

- Clinical Appropriateness Performance Indicators (CAPI reports)
  - Aligning with SVS Guidelines
- Registry Specific Quality Improvement Initiatives
- PAD PRO’s
- COVID Interest Group and Response (CIGAR)
  - VASCC Collaboration
The Society for Vascular Surgery Patient Safety Organization® (SVS PSO) and the Society for Vascular Medicine (SVM), in collaboration with the American Heart Association® (AHA), are excited to introduce the SVS Vascular Quality Initiative’s Vascular Medicine Consult (VMC) Registry.

This Registry will target the management of NEW Outpatient Consults who are being treated medically for:

- Atherosclerotic carotid artery occlusive disease
- Abdominal Aortic aneurysm
- Peripheral lower extremity arterial disease due to atherosclerosis or true aneurysm

The Vascular Medicine Consult Registry provides a unique opportunity to look at the natural history of a disease and what factors impact the progression. The emphasis of this Registry will be medication details and dosages, risk factor and lifestyle modifications such as exercise and diet, and non-operative treatments and counseling. The value of this Registry centers on the comparative effectiveness of surgery vs. medically managing these vascular diseases.

Learn more: The Vascular Quality Initiative | Vascular Medicine Consult Registry (New) (vqi.org)
Venous Quality Council:
Fedor Lurie, MD
Venous SVS PSO Organization

SVS PSO Venous Arm

**Governing Council**
- 4 SVS Representatives
- 2 AVF Representatives
- 18 Regional Group Representatives

**Research Advisory Council (venous RAC)**
- Chair: Nicholas Osborne

**Venous Quality Council (VQC)**
- Chair: Marc Passman
- 3 AVF + 2 SVS Representatives
- 18 Regional Group Representatives

**IVC Filter Committee**
- Chair: Tony Gasparis

**Varicose Vein Committee**
- Chair: Nick Osborne

**Venous Stent Committee**
- Chair: William Marston

New
VQC Update: Marc Passman, MD (Chair)

Three Year Goals for VQC:

- Dedicated podium time for VQI at AVF
- Update Varicose Vein and IVC quarterly interoperative dashboards
- Create Venous Stent dashboard
- Work on LTFU dashboards for all 3 venous procedures
- Continue work C2 disease and appropriateness of care
- Continue work with United Healthcare
- Create COPI (Center Opportunity for Process Improvement) reports
- Create CAPI (Clinical Appropriateness Performance Indicators) reports
Venous Stent Inclusion/Exclusion Criteria

**Inclusion Criteria:**
Percutaneous (closed) and/or cut-down (open) procedures to treat patients with symptomatic venous obstructions due to chronic thrombosis and/or some venous compression disorders. Vessels included: Inferior Vena Cava, Common iliac vein, External iliac vein, Common Femoral Vein, Deep Femoral Vein, Femoral Vein, Popliteal Vein.

- Acute obstruction of the Vein;
- Chronic thrombotic obstruction= Chronic Stenosis/Obstruction of the Vein;
- Non-thrombotic stenosis/compression such as May Thurner (iliac vein compression syndrome)

**Exclusion Criteria:**
- Venous Stent of the Internal Iliac (hypogastric), Great Saphenous Vein, Superior vena cava, Renal Veins, Subclavian vein, Jugular vein, Innominate vein and any upper extremity veins
- Vein Diameters that are not treatable per stent sizing recommendations
- Venous Inflow or Outflow issues precluding stent placement
Join Today!!!

• **VQI@M2S.com**

• Lots of research potential
  – Submit ideas to Venous RAC

*The Vascular Quality Initiative | National Arterial and Venous RAC Schedules (vqi.org)*
Research Advisory Council:
Michael Madigan, MD
Proposal Process:

1. Review list of projects approved to avoid duplication
   https://www.vqi.org/data-analysis/rac-approved-project-search/

2. Submit proposal online:
   http://abstracts123.com/svs1/meetinglogin


8. Predictors of Underutilization of Medical Therapy in Patients Undergoing Endovascular Revascularization for Peripheral Artery Disease. JACC Cardiovasc Interv, 13(24), 2911-2918. [https://doi.org/10.1016/j.jcin.2020.08.036](https://doi.org/10.1016/j.jcin.2020.08.036)


ALTERNATIVE CONDUITS HAVE WORSE OUTCOMES THAN PROSTHETIC GRAFTS FOR INFRA-INGUINAL BYPASS

4/28/21
Othman Abdul-Malak, MD
Mohamad Eslami, MD MPH
Background

- Single segment Great saphenous vein (GSV) is the preferred conduit in infrainguinal bypass, often not available 2/2 to prior peripheral or cardiac bypass procedures.\(^1,2\)

- Alternative autologous conduits (AAC) and Non-Autologous Biologic Conduits (NABC) are thought to have better outcomes vs traditional prosthetic conduits (PC).\(^3,4\)

- We hypothesized that PC will have similar clinical outcomes compared to AAC and NABC in LEB.

Classification of Limb ischemia

- Claudication:
  - *Rutherford class 1: mild.*
  - *Rutherford Class 2: moderate.*
  - *Rutherford Class 3: severe.*

- Outcomes of patients who present with claudication:
  - 1 to 2 percent progress to critical limb threatening ischemia (CLTI) at 5 years.
  - 7 percent risk of major amputation at 5 years.
  - 12 percent risk of major amputation at 10 years.
  - 20 percent risk of MI/stroke at 5 years.
  - 15 to 30 percent risk of death (75 percent due to cardiovascular causes) at 5 years.
Classification of Limb ischemia

- Chronic limb threatening ischemia (CLTI):
  - *Rutherford class 4: constant pain at rest*
  - *Rutherford Class 5: minor tissue loss (digital gangrene)*
  - *Rutherford Class 6: severe tissue loss involving the forefoot.*

- Outcomes of patients who present with CLTI:
  - 25 percent amputation rate at 1 year.
  - 25 percent risk of death from a cardiovascular event at 1 year.
  - Only 50 percent of patients with CTLI are alive with both limbs intact at 1 year.
Classification of Limb ischemia

- Patients presenting with CLTI are more likely to:
  - *Have prior open and endovascular interventions.*\(^6\)
  - *Not have GSV available as it was likely used in the index LEB.*\(^3,4\)
  - *Require a bypass to a more distal arterial target.*\(^6\)

- We sought to create a more homogenous patient population and control for the effect of distal arterial target more stringently.
Methods


- Inclusion criteria:
  - LEB originating from the femoral arteries (common femoral, superficial femoral, profunda femoral)
  - LEB target at the Below knee popliteal, tibial, pedal arteries.
  - Patients with CLTI.

- Primary outcomes:
  - primary patency at 1 year.
  - Major adverse limb event (MALE) a composite of above ankle amputation or vascular re-intervention.
  - MALE-free survival a composite of MALE and Death.
Cohort selection

57,557 LEB procedures in SVS-VQI for all years available 2003-2020

Excluded observations:
- Graft origin other than femoral: 7,511 procedures.
- Graft target AK pop or above: 13,930 procedures.
- Conduit status unknown: 432 procedures.

35,684 LEB procedures

Filtered cohort by type of conduit

20,450 GSV
- 12810 CLTI

2855 AAC
- 1907 CLTI

9,868 PC
- 6002 CLTI

2,511 NABC
- 1952 CLTI

Filtered cohort by CLTI
Analysis plan

- Baseline characteristics between patients based on conduit type – Chi2 and kruskall-wallis as appropriate.

- Kaplan Meier analysis of primary patency, MALE, and MALE-free survival at 1 year.

- Patient level predictors of primary patency, MALE, and MALE-free survival – univariate/multivariate cox regression.
Demographics, operative details, and Post-operative outcomes
### CLTI sub-group Demographics

<table>
<thead>
<tr>
<th></th>
<th>SSGSV (n=12810)</th>
<th>AAC (n=1907)</th>
<th>PC (n=6002)</th>
<th>NABC (N=1952)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years, mean ± SD)</td>
<td>67.25±11.12</td>
<td>67.11±10.6</td>
<td>69.12±10.53**</td>
<td>70.22±10.63**†</td>
<td>0.001</td>
</tr>
<tr>
<td>Male (n, %)</td>
<td>8922 (70 %)</td>
<td>1325 (70 %)</td>
<td>3739 (62 %)**</td>
<td>1224 (63 %)**</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Hispanic (n, %)</td>
<td>681 (5 %)</td>
<td>94 (5 %)</td>
<td>377 (6 %)*</td>
<td>197 (10 %)**†</td>
<td>0.047</td>
</tr>
<tr>
<td>Obese (n, %)</td>
<td>3769 (29 %)</td>
<td>606 (32 %)</td>
<td>1534 (26 %)**</td>
<td>480 (25 %)**</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Prior/current smoker (n, %)</td>
<td>10654 (83 %)</td>
<td>1599 (84 %)</td>
<td>5100 (85 %)*</td>
<td>1556 (80 %)**†</td>
<td>0.009</td>
</tr>
<tr>
<td>Hypertensive (n, %)</td>
<td>11295 (88 %)</td>
<td>1718 (90 %)</td>
<td>5509 (92 %)*</td>
<td>1819 (93 %)**</td>
<td>0.002</td>
</tr>
<tr>
<td>Diabetic (n, %)</td>
<td>7003 (55 %)</td>
<td>1083 (57 %)</td>
<td>3320 (55 %)</td>
<td>1145 (59 %)*</td>
<td>0.006</td>
</tr>
<tr>
<td>Hx of CAD (n, %)</td>
<td>3813 (30 %)</td>
<td>682 (36 %)*</td>
<td>2172 (36 %)*</td>
<td>799 (41 %)**†</td>
<td>0.006</td>
</tr>
<tr>
<td>Hx of CHF (n, %)</td>
<td>2333 (18 %)</td>
<td>365 (19 %)</td>
<td>1356 (23 %)**</td>
<td>534 (27 %)**†</td>
<td>0.009</td>
</tr>
<tr>
<td>hx of COPD (n, %)</td>
<td>3307 (26 %)</td>
<td>485 (25 %)</td>
<td>1741 (29 %)**</td>
<td>562 (29 %)*</td>
<td>0.03</td>
</tr>
<tr>
<td>On HD (n, %)</td>
<td>1011 (8 %)</td>
<td>97 (5 %)</td>
<td>580 (10 %)**</td>
<td>236 (12 %)**†</td>
<td>0.013</td>
</tr>
</tbody>
</table>

- **Patients in the PC and NABC groups were:**
  - **Older.**
  - **More likely female.**
  - **Had more comorbidities at baseline.**

- **Patients in the alternative conduit groups had:**
  - **More prior cerebrovascular and cardiac interventions.**
  - **Less likely to be ambulatory.**
  - **More prior peripheral vascular interventions. (highest in NABC)**
  - **More prior amputations**

<table>
<thead>
<tr>
<th></th>
<th>SSGSV (n=12810)</th>
<th>AAC (n=1907)</th>
<th>PC (n=6002)</th>
<th>NABC (N=1952)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior Carotid intervention (n, %)</td>
<td>472 (4 %)</td>
<td>436 (28 %)*</td>
<td>1686 (31 %)*</td>
<td>636 (36 %)**†</td>
<td>0.002</td>
</tr>
<tr>
<td>Prior Aneurysm repair (n, %)</td>
<td>1630 (15 %)</td>
<td>361 (23 %)</td>
<td>1270 (23 %)*</td>
<td>442 (25 %)*</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Prior CABG (n, %)</td>
<td>2220 (21 %)</td>
<td>361 (23 %)</td>
<td>1270 (23 %)*</td>
<td>442 (25 %)*</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Prior Coronary PCI (n, %)</td>
<td>8497 (67 %)</td>
<td>1310 (69 %)</td>
<td>3646 (61 %)*</td>
<td>988 (51 %)**</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Pre-operative living status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.039</td>
</tr>
<tr>
<td>Home</td>
<td>12231 (96 %)</td>
<td>1847 (97 %)</td>
<td>5710 (96 %)</td>
<td>1827 (94 %)</td>
<td></td>
</tr>
<tr>
<td>Nursing home</td>
<td>495 (4 %)</td>
<td>48 (3 %)*</td>
<td>252 (4 %)*</td>
<td>117 (6 %)**†</td>
<td></td>
</tr>
<tr>
<td>Homeless</td>
<td>50 (0 %)</td>
<td>8 (0 %)</td>
<td>16 (0 %)</td>
<td>7 (0 %)</td>
<td></td>
</tr>
<tr>
<td>Prior LE bypass (n, %)</td>
<td>2948 (23 %)</td>
<td>856 (45 %)*</td>
<td>2594 (43 %)*</td>
<td>1079 (55 %)**†</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Prior LE endovascular (n, %)</td>
<td>5290 (41 %)</td>
<td>942 (49 %)*</td>
<td>3086 (51 %)*</td>
<td>1054 (54 %)**</td>
<td>0.024</td>
</tr>
<tr>
<td>Prior Major Amputation (n, %)</td>
<td>668 (5 %)</td>
<td>117 (6 %)</td>
<td>453 (8 %)*</td>
<td>195 (10 %)**†</td>
<td>0.004</td>
</tr>
</tbody>
</table>
### CLTI sub-group operative details

<table>
<thead>
<tr>
<th>Laterality (right, %)</th>
<th>SSGSV (n=12810)</th>
<th>AAC (n=1907)</th>
<th>PC (n=6002)</th>
<th>NABC (N=1952)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>asymptomatic</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>claudication</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td></td>
</tr>
<tr>
<td>rest pain</td>
<td>4772 (23 %)</td>
<td>782 (28 %)*‡</td>
<td>2520 (26 %)**‡</td>
<td>560 (22 %)</td>
<td></td>
</tr>
<tr>
<td>tissue loss</td>
<td>8038 (40 %)</td>
<td>1125 (40 %)</td>
<td>3482 (36 %)</td>
<td>1392 (56 %)**‡</td>
<td></td>
</tr>
<tr>
<td>acute ischemia</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td></td>
</tr>
<tr>
<td>Infra-geniculate bypass target</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.001</td>
</tr>
<tr>
<td>BK pop (n, %)</td>
<td>5243 (41 %)</td>
<td>400 (21 %)</td>
<td>3300 (55 %)</td>
<td>339 (17 %)</td>
<td></td>
</tr>
<tr>
<td>Tibial (n, %)</td>
<td>6875 (54 %)</td>
<td>1364 (72 %)</td>
<td>2595 (43 %)**‡</td>
<td>1459 (75 %)**‡</td>
<td></td>
</tr>
<tr>
<td>Tibial at ankle/Pedal (n, %)</td>
<td>673 (5 %)</td>
<td>142 (7 %)</td>
<td>89 (1 %)**</td>
<td>154 (8 %)**‡</td>
<td></td>
</tr>
<tr>
<td>Timing of surgery (n, %)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.042</td>
</tr>
<tr>
<td>Elective</td>
<td>9877 (77 %)</td>
<td>1506 (79 %)</td>
<td>4624 (77 %)</td>
<td>1446 (74 %)</td>
<td></td>
</tr>
<tr>
<td>Urgent</td>
<td>2788 (22 %)</td>
<td>383 (20 %)</td>
<td>1271 (21 %)</td>
<td>476 (24 %)*‡</td>
<td></td>
</tr>
<tr>
<td>Emergent</td>
<td>139 (1 %)</td>
<td>18 (1 %)</td>
<td>102 (2 %)</td>
<td>29 (1 %)</td>
<td></td>
</tr>
</tbody>
</table>

- Patients in PC group had more proximal bypass targets.
- Patient undergoing LEB with NABC were more likely to be performed urgently/emergently.

- Patients in the AAC group were likely to have multiple vein segments.
- Patient in the PC group were more likely to have distal venous adjuncts, and concomitant PVI/endarterectomy at the time of the LEB.

<table>
<thead>
<tr>
<th>Type of Anesthesia (n, %)</th>
<th>SSGSV (n=12810)</th>
<th>AAC (n=1907)</th>
<th>PC (n=6002)</th>
<th>NABC (N=1952)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spinal</td>
<td>402 (3 %)</td>
<td>33 (2 %)</td>
<td>93 (2 %)</td>
<td>32 (2 %)</td>
<td></td>
</tr>
<tr>
<td>Epidural</td>
<td>262 (2 %)</td>
<td>24 (1 %)</td>
<td>56 (1 %)</td>
<td>16 (1 %)</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>12137 (95 %)</td>
<td>1850 (97 %)*</td>
<td>5848 (98 %)*</td>
<td>1903 (98 %)*</td>
<td></td>
</tr>
<tr>
<td>Number of vein segments (n, %)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>missing/NA</td>
<td>738 (6 %)</td>
<td>27 (1 %)</td>
<td>5262 (88 %)</td>
<td>1576 (81 %)</td>
<td></td>
</tr>
<tr>
<td>One</td>
<td>11910 (94 %)</td>
<td>420 (22 %)</td>
<td>629 (11 %)</td>
<td>326 (17 %)</td>
<td></td>
</tr>
<tr>
<td>Two</td>
<td>0 (0 %)</td>
<td>1300 (68 %)</td>
<td>79 (1 %)</td>
<td>39 (2 %)</td>
<td></td>
</tr>
<tr>
<td>Distal venous cuff (n, %)</td>
<td>140 (1 %)</td>
<td>22 (1 %)</td>
<td>927 (16 %)**‡</td>
<td>30 (2 %)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Concomitant PVI (n, %)</td>
<td>866 (7 %)</td>
<td>107 (6 %)</td>
<td>577 (10 %)**‡</td>
<td>122 (6 %)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Concomitant endarterectomy (n, %)</td>
<td>3741 (29 %)</td>
<td>475 (25 %)</td>
<td>2064 (34 %)**‡</td>
<td>535 (27 %)</td>
<td>0.005</td>
</tr>
</tbody>
</table>
## CLTI sub-group post-operative outcomes

<table>
<thead>
<tr>
<th></th>
<th>SSGSV (n=12810)</th>
<th>AAC (n=1907)</th>
<th>PC (n=6002)</th>
<th>NABC (N=1952)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post operative surgical site infection (n, %)</td>
<td>459 (4 %)</td>
<td>65 (3 %)</td>
<td>189 (3 %)</td>
<td>64 (3 %)</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Post-operative stroke (n, %)</td>
<td>88 (1 %)</td>
<td>18 (1 %)</td>
<td>43 (1 %)</td>
<td>8 (0 %)</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Return to Operating room (n, %)</td>
<td>1800 (14 %)</td>
<td>311 (16 %)*</td>
<td>876 (15 %)</td>
<td>351 (18 %)*†</td>
<td>0.049</td>
</tr>
<tr>
<td>Post-op MI (n, %)</td>
<td>434 (3 %)</td>
<td>92 (5 %)*</td>
<td>253 (4 %)*</td>
<td>73 (4 %)</td>
<td>0.028</td>
</tr>
<tr>
<td>Post-op Dysrhythmia (n, %)</td>
<td>527 (4 %)</td>
<td>103 (5 %)</td>
<td>272 (5 %)</td>
<td>96 (5 %)</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>Post-op CHF (n, %)</td>
<td>257 (2 %)</td>
<td>48 (3 %)</td>
<td>147 (2 %)</td>
<td>67 (3 %)*</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Post-op respiratory complication (n, %)</td>
<td>276 (2 %)</td>
<td>48 (3 %)</td>
<td>198 (3 %)*</td>
<td>64 (3 %)*</td>
<td>0.012</td>
</tr>
<tr>
<td>30-day mortality (n, %)</td>
<td>235 (2 %)</td>
<td>40 (2 %)</td>
<td>197 (3 %)**</td>
<td>46 (2 %)</td>
<td>0.049</td>
</tr>
</tbody>
</table>

■ No difference in post-op SSI or CVA among groups.

■ AAC and NABC groups were likely to have a return to the OR during their index operation.

■ Alternative conduit groups had slightly higher rates of post-op CHF exacerbations, MI, and respiratory complications compared to the GSV group.

■ PC had a higher 30 day mortality compared to all other groups.
1 year Primary Patency, MALE, and MALE-Free survival
Primary Patency at 1 year by type of Conduit

GSV:
- 6 month: 82.72% ± 0.66%
- 12 month: 61.36% ± 1.34%

AAC:
- 6 month: 74.77% ± 1.91%
- 12 month: 45.73% ± 3.37%

PC:
- 6 month: 83.45% ± 1.01%
- 12 month: 58.63% ± 2.3%

NABC:
- 6 month: 66.96% ± 2.34%
- 12 month: 35.98% ± 3.11%

Number at risk

<table>
<thead>
<tr>
<th></th>
<th>GSV 3563</th>
<th>3216</th>
<th>2858</th>
<th>2530</th>
<th>2209</th>
<th>1483</th>
<th>184</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSV</td>
<td>3216</td>
<td>2858</td>
<td>2530</td>
<td>2209</td>
<td>1483</td>
<td>184</td>
<td></td>
</tr>
<tr>
<td>PC</td>
<td>1455</td>
<td>1283</td>
<td>1153</td>
<td>1040</td>
<td>925</td>
<td>601</td>
<td>60</td>
</tr>
<tr>
<td>AAC</td>
<td>571</td>
<td>505</td>
<td>430</td>
<td>360</td>
<td>299</td>
<td>193</td>
<td>28</td>
</tr>
<tr>
<td>NABC</td>
<td>458</td>
<td>371</td>
<td>308</td>
<td>258</td>
<td>207</td>
<td>126</td>
<td>23</td>
</tr>
</tbody>
</table>

* - sig. vs GSV, ^ - sig. vs AAC, † - sig. vs PC, ‡ - sig. vs NABC
MALE at 1 year by type of Conduit

GSV:
- 6 month: 77.93% ± 0.73%
- 12 month: 56.25% ± 1.28%

AAC:
- 6 month: 69.62% ± 2.04%
- 12 month: 41.3% ± 3.04%

PC:
- 6 month: 77.81% ± 1.14%
- 12 month: 56.31% ± 2.27%

NABC:
- 6 month: 58.54% ± 2.51%
- 12 month: 31.93% ± 3.01%

* - sig. vs GSV, † - sig. vs AAC, †† - sig. vs PC, ††† - sig. vs NABC
MALE-Free survival at 1 year by type of Conduit

GSV:
- 6 month: 72.09% ± 0.62%
- 12 month: 53.13% ± 0.74%

AAC:
- 6 month: 68.23% ± 1.61%
- 12 month: 46.03% ± 1.82%

PC:
- 6 month: 66.23% ± 0.96%
- 12 month: 47.25% ± 1.09%

NABC:
- 6 month: 57.16% ± 1.81%
- 12 month: 34.84% ± 1.83%

* - sig. vs GSV, ^ - sig. vs AAC, † - sig. vs PC, ‡ - sig. vs NABC

Number at risk

<table>
<thead>
<tr>
<th></th>
<th>GSV 5472</th>
<th>4809</th>
<th>4232</th>
<th>3748</th>
<th>3333</th>
<th>2574</th>
<th>1390</th>
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<tbody>
<tr>
<td></td>
<td>PC 2476</td>
<td>2042</td>
<td>1773</td>
<td>1554</td>
<td>1369</td>
<td>1045</td>
<td>561</td>
</tr>
<tr>
<td></td>
<td>AAC 864</td>
<td>745</td>
<td>648</td>
<td>560</td>
<td>480</td>
<td>371</td>
<td>214</td>
</tr>
<tr>
<td></td>
<td>NABC 775</td>
<td>599</td>
<td>501</td>
<td>418</td>
<td>350</td>
<td>265</td>
<td>167</td>
</tr>
</tbody>
</table>
Adjusted Cox models of Primary Patency, MALE, and MALE-Free survival at 1 year stratified by bypass target
Primary Patency at 1 year - CLTI sub-group

- Univariate Cox regression models for:
  - Conduit, gender, race, ethnicity age, hypertension, smoking status, diabetes, obesity, prior LE bypass, prior LE endo, prior AAA repair, prior major amputation, CAD, CHF, COPD, HD, preoperative living status, preoperative ambulatory status, urgency of procedure, anesthesia, preoperative anemia
  - Stratified by distal bypass target.

- Multi-variate backwards selection model for significant predictors on univariate analysis.
MALE at 1 year - CLTI sub-group

- Univariate Cox regression models for:
  - Conduit, gender, race, ethnicity age, hypertension, smoking status, diabetes, obesity, prior LE bypass, prior LE endo, prior AAA repair, prior major amputation, CAD, CHF, COPD, HD, preoperative living status, preoperative ambulatory status, urgency of procedure, anesthesia, preoperative anemia
  - Stratified by distal bypass target.

- Multi-variate backwards selection model for significant predictors on univariate analysis.
MALE-free survival at 1 year - CLTI sub-group

- Univariate Cox regression models for:
  - Conduit, gender, race, ethnicity age, hypertension, smoking status, diabetes, obesity, prior LE bypass, prior LE endo, prior AAA repair, prior major amputation, CAD, CHF, COPD, HD, preoperative living status, preoperative ambulatory status, urgency of procedure, anesthesia, preoperative anemia
  - Stratified by distal bypass target.

- Multi-variate backwards selection model for significant predictors on univariate analysis.
Conclusions

- We recommend the use of PC for below-knee LEB over AAC, AAC could potentially be of benefit in extremely distal targets due to conduit vessel-mismatch in selected patients.

- We recommend the use of PC over NABC in below-knee LEB regardless of bypass target, NABC may play a role in the cases of bypasses performed for infection in the absence of available autologous vein; however this study does not address this role of NABC.

- Prospective studies are needed to compare the utility of PC over AAC in extremely distal targets, and to compare PC vs GSV as prosthetic conduit technology continues to improve.
Limitations

■ The retrospective and observational nature of the analysis remains an important limitation.

■ We assume that every patient treated with an alternative conduit is truly lacking adequate GSV.

■ Variables such as TASC classifications are not uniformly available and often missing, however we attempted to mitigate this by using the indication of a procedure as the surrogate for disease severity as that was a more available variable.

■ Self-reporting nature of the SVS VQI inherently can introduce bias as providers can choose to include patients likely to have positive outcomes.

■ Long term follow up in the VQI does not routinely extend past 1 year, therefore it is not possible to draw meaningful conclusions further than 1 year.
Using the VQI to evaluate utilization trends after Medicaid expansion

Elizabeth Andraska, Mohammad Eslami
Research question

• What effect did the 2014 Medicaid expansion have on trends in vascular surgery?
Aims

- **Aim 1**: Determine if regions that adopted Medicaid expansion had significantly improved outcomes
  - Compare outcomes of Medicaid expanders (ME) to non-expanders (NME)

- **Aim 2**: Compare the vascular surgery utilization prior and after 2014 Medicaid expansion
  - Compare % of patients who underwent surgery for a “hard indication” in ME and NME

- **Aim 3**: Compare follow-up rates in different groups for both inter and intragroup variability as above.
Dataset

• Inclusion:
  • Total patients: 17,311
  • Complete expanders (25 states) vs. complete non-expanders (19 states)
  • CEA (9,135), AAA repair (2295), LEB (5,881)
  • 2012-2019

• Exclusion:
  • Age > 65
  • Medicaid early expanders vs. never-expanders
  • Only those hospitals included in the dataset from 2012-2019
  • Emergent surgery: ruptures and ALI
Outcomes

• **Aim 1**: 30d mortality, 1yr mortality, and post op morbidity (changes from dataset to dataset but generally includes all in-hospital post op complications)

• **Aim 2**: “Hard indication”
  - CEA: asymptomatic > 80% or symptomatic
  - EVAR: > 5.5cm or symptomatic (ruptures excluded)
  - oAAA: > 5.5cm or symptomatic (ruptures excluded)
  - LEB: Rest pain or tissue loss (ALI excluded)

• **Aim 3**: 1yr follow-up
Analysis

• Interrupted time series analysis
• Compare annual rates of each outcome in ME and NME before vs. after 2014
Decrease 0.03% in ME compared to NME (p = 0.02)
Trends in 1yr mortality over time

Intervention starts: 2014

Regression with Newey-West standard errors - lag(0)
Decrease 0.4% in ME compared to NME (p = 0.01)
Increase 0.71% in ME compared to NME (p = 0.04)
Conclusions

• ME resulted in decreased rates of post-operative morbidity and mortality
• ME resulted in more patients undergoing surgery for a hard indication
• These trends suggest that ME resulted in better health care utilization and improved outcomes among non-elderly undergoing vascular surgery
GC Update:

• Agenda for GC Meeting – April 12, 2021

• Dr. Mureebe discussed the formation of the SVS PSO’s new Diversity, Equity and Inclusion Committee

• Drs. Lemmon and Jorgensen presented the GC a proposal on a new PSO Trainee Scholarship Program

• Dr. Weaver provided an update on progress against strategic priorities, including an update on our collaboration with ACC
M2S Updates

Spring 2021
Regional Group Meetings
VQI Technology Updates
Technology Released in Q3 2020

- Revised warning COVID-19 message for Follow-up Mandatory Variable
  - Released on **7/29/2020**
  - The VQI added a temporary message about the impact of COVID-19 on LTFU completion rate calculations. The following message will display when submitting a LTFU that is missing any mandatory variable:
    - “IMPORTANT: The PSO understands that routine follow up visits may not be possible due to COVID-19 state mandates. Special considerations will be part of our LTFU calculation for 2020, please collect all of the required fields that are possible during this time.”
  - As a reminder, the VQI allows phone and telehealth appointments to be used for LTFU when Face-to-Face visits are not feasible.
“Was Help Text Helpful?” feature in help text box

- Released on **7/29/2020**
- This new feature is to provide feedback regarding the current help text. For each help text field, users will have the option to indicate if the help text provided was useful or not. This information will help the VQI to identify data fields that may be unclear to members.
- The “Was this helpful?” vote up/down button will display in the bottom right corner of the help text box:
Technology Released in Q4 2020

• Across-registry revision to add Covid-19 variables and optional Patient Email
  – Released on 8/29/2020 (SUPRA, INFRA, HDA, VVR, VSR & PVI )
  – Released on 9/23/2020 (AMP, IVC, CAS, EVAR & TEVAR)
  – Added 4 procedure variables and 1 30-day and LTF follow-up variable to VQI registries to collect information about COVID-19.
  – Added an optional Patient Email variable in the procedure form to support the upcoming PRO project.
  – The procedure fields are added to the existing Procedure form tab and follow-up field to the existing 30-day and long-term Follow-up tabs. All fields are consistent across registries, and are added for all sites enrolled in the registry.
TEVAR Revision to align with SVS/STS guidelines

- Released on **9/30/2020**
- Modified fields on the TEVAR form in order to become aligned with updated SVS/STS guidelines described in the article “Society for Vascular Surgery (SVS) and Society of Thoracic Surgeons (STS) reporting standards for type B aortic dissections”.
- The overall intent of the SVS/STS is to generate more cohesive classification guidelines for both societies to follow in order to extract more granular information which would result in better reporting and research on type b aortic dissections.
- The definition prior to this change was Type A = Zones 0-1 and Type B = Zones 2-5. The new definition is Type A = Zone 0 and Type B = Zone 1 and beyond as shown in the image to the right.
Technology Released in Q4 2020

- TEVAR Revision to align with SVS/STS guidelines (Cont’d)
  - Procedure Form
    - Relation to Prior Dissection: The existing “Relation to Prior Dissection” field received updated help text that identifies the new dissection zones and includes a new image within the help text pop-up.
    - Entry Flow: A new “Entry Flow” field was added above False Lumen Rx.
    - Intestinal Ischemia and Unintentional Septal Rupture: Intestinal Ischemia and Unintentional Septal Rupture received additions to help text.
  - Follow-up Form
    - Entry Flow: The new “Entry Flow” field added to the Procedure was also added to the Follow-up, dependent on the Pathology field (TEVAR_PATH) being Dissection (2).
    - Current Endoleak?: The dependency for this field changed to display when Pathology is Aneurysm in addition to Pathology being Dissection or Aneurysm from dissection.
    - Intestinal Ischemia: Similar to the Procedure, this field received additional help text.
Technology Released in Q4 2020

- Varicose Vein Registry (VVR) & Venous Stent Registry (VSR) revision for New CEAP Clinical Classification
  - Released on 11/11/2020
  - CEAP classification used for classifying venous disorders has been updated to align with the current understanding of chronic venous disease (CVD).
- New selections of C2r, C4c, and C6r were added to the current list of CEAP classifications.

<table>
<thead>
<tr>
<th>C class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C0</td>
<td>No visible or palpable signs of venous disease</td>
</tr>
<tr>
<td>C1</td>
<td>Telangiectasias or reticular veins</td>
</tr>
<tr>
<td>C2</td>
<td>Varicose veins</td>
</tr>
<tr>
<td>C2r</td>
<td>Recurrent varicose veins</td>
</tr>
<tr>
<td>C3</td>
<td>Edema</td>
</tr>
<tr>
<td>C4</td>
<td>Changes in skin and subcutaneous tissue secondary to CVD</td>
</tr>
<tr>
<td>C4a</td>
<td>Pigmentation or eczema</td>
</tr>
<tr>
<td>C4b</td>
<td>Lipodermatosclerosis or atrophie blanche</td>
</tr>
<tr>
<td>C5c</td>
<td>Corona phlebectatica</td>
</tr>
<tr>
<td>C6</td>
<td>Healed</td>
</tr>
<tr>
<td>C7</td>
<td>Active venous ulcer</td>
</tr>
<tr>
<td>C7r</td>
<td>Recurrent active venous ulcer</td>
</tr>
</tbody>
</table>
Vascular Medicine Consult (VMC) registry revision to add new drug category and update CAD

- Released on 11/19/2020
- Added a new drug category called Hemorheologic Agent (categorical field) that contains Cilostazol, Pentoxifylline and Other as Hemorheologic Types. These fields were added to Demographics, Treatment and Follow-up tabs. Dosing and Dosing Other as well as Frequency and Frequency Other will be collected for both Cilostazol and Pentoxifylline.
- The following existing Cilostazol fields are retired from the form:
  - PRETX_CILOSTAZOL
  - TX_CILOSTAZOL
  - LTF_CILOSTAZOL
- Added a select option, CAD asymptomatic, to the Procedure field “CAD Symptoms”.

Technology Released in Q4 2020

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Projects in Progress

- VQI Patient Reported Outcome (PRO) collection for PVI
- Add opioid variables to INFRA
- Long-term follow-up reports
- HDA 2021 medium revision
- VMC 2021 small revision
- INFRA 2021 major revision
- SUPRA 2021 major revision
- OPEN 2021 major revision
Registry Projects
These projects are conducted within the SVS PSO and only non-identifiable data (removal of patient, center and physician information) will be provided to Medtronic/BARD/Cook/Gore or the FDA. Only standard of care practice is being evaluated. For such PSO activities, patient informed consent and Institutional Review Board review are not required.

Sites must follow their institutional guidelines.
The SVS PSO is excited to announce the reopening of the TEVAR Dissection Surveillance Project to evaluate the Cook Zenith Dissection Endovascular System. FDA approval was granted for this device after safety and effectiveness were demonstrated in pre-market studies of complicated dissection with the proviso that the efficacy of TEVAR treatment of descending aortic dissection would be more fully analyzed through post-market surveillance, as was done through VQI for the W. L. Gore and Medtronic devices after their approval.

- Patients will have 30 day, and annual visits for 5 years.
- Total reimbursement of $4,000 per patient for a patient followed annually for 5 years.
TEVAR Dissection Surveillance Project is Open for Enrollment

- 12 of the 180 required patients enrolled (11 potential cases in process)
  - Retrospective enrollment allowed- All eligible cases from December 31, 2018 (protocol FDA approval date)
- 23 of 40 sites enrolled (10 more in contracting)
  - This project is conducted within the SVS PSO and only non-identifiable data (removal of patient, center and physician information) will be provided to Cook or the FDA. Only standard of care practice is being evaluated. For such PSO activities, patient informed consent and Institutional Review Board review are not required.

For more information, please contact: tevarproject@m2s.com
Initiated in October 2014, the TEVAR Dissection Surveillance Project Arm evaluates the W.L. Gore and Medtronic devices for treatment of Type B thoracic dissections.

- Meeting FDA requirement
  - 194 chronic and 200 acute patients with device technical success

- Currently in 5-year follow-up phase
PATHWAYS Support
PATHWAYS Support Projects

Claims Validation
The 2019 Claims Validation process was launched in July 2020.
• 50% of Centers have completed validation or are in progress.
• Please reach out to PATHWAYS Support if you were notified and haven’t started and are unclear with the process.
• PATHWAYS Support is here to help you!

Plans to launch 2020 Claims Validation are currently underway...Stay tuned!

PATHWAYS Educational Webinars
• Reporting & Analytics webinar series (2 sessions) were held in November & December.
  • Visit the Resources tab in PATHWAYS to access the presentations and recordings.
• EVAR FU Aggregate Report – Excited to expand this report to additional registries in the future!
PATHWAYS Support

PATHWAYS Communication

We have heard feedback that due to firewall and spam filter configurations at your centers, you may not be receiving mass emails from M2S. We are excited to help our users keep up to date with new release announcements.

- A new “Release Notes” button has been added to the “Support” tab in the upper left corner to provide you with historical release announcements to help you search for updates.
Conclusion
Congratulations!

• Associate Regional Medical Director
  Chris Smolock, MD
  Cleveland Clinic
Meeting Evaluation/Roundtable

- What did you like about this meeting?
- What can we do better?
- Next meeting location?
  - In person
  - Remote
  - Hybrid possibly at VEITH
REMEMBER TO PSO:

• **P**UT your FULL NAME in RingCentral to get credit for attendance and CME/CE credit (no exceptions will be made)

• **S**END an email to ljohnson@svspso.org with names of group members that are sharing 1 device

• **O**FFICALLY apply for CME/CE credit by clicking this link: https://dmu.co1.qualtrics.com/jfe/form/SV_cSL4LqNBatpl5vE

You only have **7 days** to complete forms for CME/CE Credit.

NO EMAIL WILL BE SENT AS A REMINDER OR WITH THE CME/CE LINK