Michigan Vascular Study Group (MVSG)

November 4, 2021
VQI Update
In Conjunction with BMC2 VS CQI
Agenda:

VQI Michigan Data Review: Ash Mansour, MD
VQI National Update: Carrie Bosela, SVS PSO
AQC Update: Mitchell Weaver, MD
VQC Update: Jennifer Watson, MD
RAC Update: Nicholas Osborne, MD
Welcome and Introductions

Ascension Borgess Hospital
Ascension Providence Hospital, Novi Campus
Ascension Providence Hospital, Southfield Campus
Ascension St. John Hospital
Ascension St. Mary's Hospital
Beaumont Royal Oak
Bronson Battlecreek Hospital
Bronson Methodist Hospital
Covenant Healthcare
DMC Harper University Hospital
Henry Ford Allegiance Health
Henry Ford Hospital, Detroit MI
Henry Ford Hospital, West Bloomfield MI
Henry Ford Macomb Hospital
McLaren Bay Region
McLaren Flint
McLaren Greater Lansing
McLaren Macomb
McLaren Northern Michigan
McLaren Port Huron
Mercy Health Saint Mary's
Michigan Vascular Center
MidMichigan Health - Midland
Munson Medical Center
Oaklawn Hospital
Spectrum Health Hospital
St. Joseph Mercy Health System
St. Mary Mercy Livonia
University of Michigan
Vascular Institute of Michigan
Ash Mansour, MD

VQI Regional Quality Report

Fall 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.
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 aggregate percentage of cases with the noted outcome, as well as the 10th, 25th, 50th (median), 75th, and 90th percentiles for centers in your region and VQI, respectively ([10th|25th|50th|75th|90th]). Your center’s results are highlighted blue if your center is in the “top” 25th percentile for VQI Overall, and coral if your center is in the “bottom” 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 = “Top” 25th percentile  Coral = “Bottom” 25th percentile

Note that procedure volume results are not highlighted.
<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>[26</td>
<td>88</td>
<td>147</td>
</tr>
<tr>
<td>All</td>
<td>Procedure Volume, All Years</td>
<td>[78</td>
<td>179</td>
<td>456</td>
</tr>
<tr>
<td>Multiple</td>
<td>Long-Term Follow-up</td>
<td>66.7% [0</td>
<td>5</td>
<td>74</td>
</tr>
<tr>
<td>Discharge Medications</td>
<td>88.8% [77</td>
<td>86</td>
<td>89</td>
<td>94</td>
</tr>
<tr>
<td>TFEM CAS ASYMPC</td>
<td>Stroke/Death</td>
<td>0% [0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TFEM CAS SYMPC</td>
<td>Stroke/Death</td>
<td>7.8% [0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TCAR ASYMPC</td>
<td>Stroke/Death</td>
<td>1.8% [0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>TCAR SYMPC</td>
<td>Stroke/Death</td>
<td>2.0% [0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CEA ASYMPC</td>
<td>Stroke/Death</td>
<td>0% [0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CEA SYMPC</td>
<td>Postop LOS&gt;1 Day</td>
<td>21.3% [2</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Postop LOS&gt;1 Day</td>
<td>Stroke/Death</td>
<td>0% [0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>EVAR</td>
<td>Postop LOS&gt;2 Days</td>
<td>11.2% [1</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Sac Diameter Reporting</td>
<td>49.4% [10</td>
<td>24</td>
<td>36</td>
<td>68</td>
</tr>
<tr>
<td>SVS Sac Size Guideline</td>
<td>88.2% [82</td>
<td>84</td>
<td>90</td>
<td>96</td>
</tr>
<tr>
<td>TEVAR</td>
<td>Sac Diameter Reporting</td>
<td>33.3% [25</td>
<td>40</td>
<td>67</td>
</tr>
<tr>
<td>OAAA</td>
<td>In-Hospital Mortality</td>
<td>3.6% [0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>SVS Cell-Saver Guideline</td>
<td>92% [84</td>
<td>87</td>
<td>93</td>
<td>99</td>
</tr>
<tr>
<td>SVS Iliac Inflow Guideline</td>
<td>95.6% [70</td>
<td>85</td>
<td>96</td>
<td>100</td>
</tr>
<tr>
<td>PVI CLAUD</td>
<td>ABI/Toe Pressure</td>
<td>82.2% [69</td>
<td>77</td>
<td>87</td>
</tr>
<tr>
<td>INFRA CLTI</td>
<td>Major Complications</td>
<td>4.3% [0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>SUPRA CLTI</td>
<td>Major Complications</td>
<td>0% [0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LEAMP</td>
<td>Postop Complications</td>
<td>NA (&lt;3 centers)</td>
<td>10.6% [0</td>
<td>4</td>
</tr>
<tr>
<td>HDA</td>
<td>Primary AVF vs. Graft</td>
<td>NA (&lt;3 centers)</td>
<td>81.8% [61</td>
<td>73</td>
</tr>
<tr>
<td>IVCF</td>
<td>Filter Retrieval Reporting</td>
<td>NA (&lt;3 centers)</td>
<td>50% [13</td>
<td>36</td>
</tr>
</tbody>
</table>

Legend: Blue = “Top” 25th percentile  Coral = “Bottom” 25th percentile

Note that procedure volume results are not highlighted.
About the Appendix

The Region Volume Appendix provides your region’s case volumes for each report. In addition, the number of centers with cases contributing to each report is given. Note that columns referencing complete cases are appropriately left blank for non risk-adjusted reports.

<table>
<thead>
<tr>
<th>Report</th>
<th>Included Cases</th>
<th>Centers with Included Cases</th>
<th>Centers with at least 10 Included Cases</th>
<th>Complete Cases</th>
<th>Centers with Complete Cases</th>
<th>Centers with at least 10 Complete Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-Term Follow-up</td>
<td>3646</td>
<td>19</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discharge Medications</td>
<td>3021</td>
<td>21</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TFEM CAS ASYMP: Stroke/Death</td>
<td>85</td>
<td>12</td>
<td>3</td>
<td>81</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>TFEM CAS SYMP: Stroke/Death</td>
<td>103</td>
<td>12</td>
<td>2</td>
<td>97</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>TCAR ASYMP: Stroke/Death</td>
<td>165</td>
<td>15</td>
<td>5</td>
<td>161</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>TCAR SYMP: Stroke/Death</td>
<td>70</td>
<td>15</td>
<td>2</td>
<td>65</td>
<td>15</td>
<td>2</td>
</tr>
<tr>
<td>CEA ASYMP: Stroke/Death</td>
<td>169</td>
<td>6</td>
<td>4</td>
<td>165</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>CEA ASYMP: Postop LOS&gt;1 Day</td>
<td>169</td>
<td>6</td>
<td>4</td>
<td>165</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>CEA SYMP: Stroke/Death</td>
<td>94</td>
<td>4</td>
<td>2</td>
<td>93</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>CEA SYMP: Postop LOS&gt;1 Day</td>
<td>94</td>
<td>4</td>
<td>2</td>
<td>93</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>EVAR: Postop LOS&gt;2 Days</td>
<td>116</td>
<td>4</td>
<td>3</td>
<td>105</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>EVAR: Sac Diameter Reporting</td>
<td>154</td>
<td>5</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVAR: SVS Sac Size Guideline</td>
<td>102</td>
<td>4</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEVAR: Sac Diameter Reporting</td>
<td>21</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OAAA: In-Hospital Mortality</td>
<td>279</td>
<td>6</td>
<td>5</td>
<td>263</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>OAAA: SVS Cell-Saver Guideline</td>
<td>262</td>
<td>6</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OAAA: SVS Iliac Inflow Guideline</td>
<td>296</td>
<td>6</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVI CLAUD: ABI/Toe Pressure</td>
<td>736</td>
<td>14</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFRA CLTI: Major Complications</td>
<td>117</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUPRA CLTI: Major Complications</td>
<td>27</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEAMP: Postop Complications</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HDA: Primary AVF vs. Graft</td>
<td>196</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IVCF: Filter Retrieval Reporting</td>
<td>48</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Procedure Volume, All Years

Includes all procedures with procedure date through June 30, 2021

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>1974</td>
<td>57614</td>
</tr>
<tr>
<td>CEA</td>
<td></td>
<td>4381</td>
<td>158265</td>
</tr>
<tr>
<td>EVAR</td>
<td></td>
<td>1715</td>
<td>63655</td>
</tr>
<tr>
<td>HDA</td>
<td></td>
<td>3037</td>
<td>62972</td>
</tr>
<tr>
<td>INFRA</td>
<td></td>
<td>2434</td>
<td>66699</td>
</tr>
<tr>
<td>IVCF</td>
<td></td>
<td>829</td>
<td>15864</td>
</tr>
<tr>
<td>LEAMP</td>
<td></td>
<td>NA (&lt;3 centers)</td>
<td>21477</td>
</tr>
<tr>
<td>OAAA</td>
<td></td>
<td>685</td>
<td>14897</td>
</tr>
<tr>
<td>PVI</td>
<td></td>
<td>10372</td>
<td>274908</td>
</tr>
<tr>
<td>SUPRA</td>
<td></td>
<td>830</td>
<td>21514</td>
</tr>
<tr>
<td>TEVAR</td>
<td></td>
<td>283</td>
<td>20751</td>
</tr>
<tr>
<td>Varicose Veins</td>
<td></td>
<td>12853</td>
<td>46683</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td>39940</td>
<td>825299</td>
</tr>
</tbody>
</table>
Procedure Volume by Center in Your Region (Through June 2021)

Centers (centers with <10 cases not shown)

Procedure Volume Across VQI (Through June 2021)

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 July 31, 2021, N=6074 Physicians)
Physician Specialties Across Your Region (as of July 31, 2021, N=290 Physicians)
Long-Term Follow-up

Procedures performed between July 1, 2018 and June 30, 2019

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>324 (80%)</td>
<td>9602 (62%)</td>
<td></td>
</tr>
<tr>
<td>CEA</td>
<td>502 (71%)</td>
<td>18987 (70%)</td>
<td></td>
</tr>
<tr>
<td>EVAR</td>
<td>171 (64%)</td>
<td>7432 (69%)</td>
<td></td>
</tr>
<tr>
<td>HDA</td>
<td>415 (54%)</td>
<td>8030 (64%)</td>
<td></td>
</tr>
<tr>
<td>INFRA</td>
<td>295 (72%)</td>
<td>7148 (72%)</td>
<td></td>
</tr>
<tr>
<td>IVCF</td>
<td>NA (&lt;3 centers)</td>
<td>1922 (76%)</td>
<td></td>
</tr>
<tr>
<td>LEAMP</td>
<td>NA (&lt;3 centers)</td>
<td>3272 (66%)</td>
<td></td>
</tr>
<tr>
<td>OAAA</td>
<td>69 (62%)</td>
<td>1286 (74%)</td>
<td></td>
</tr>
<tr>
<td>PVI</td>
<td>1579 (66%)</td>
<td>36370 (67%)</td>
<td></td>
</tr>
<tr>
<td>SUPRA</td>
<td>97 (73%)</td>
<td>2286 (70%)</td>
<td></td>
</tr>
<tr>
<td>TEVAR</td>
<td>39 (28%)</td>
<td>2852 (65%)</td>
<td></td>
</tr>
<tr>
<td>Overall (July 2018-June 2019)</td>
<td>3646 (67%)</td>
<td>99187 (68%)</td>
<td></td>
</tr>
<tr>
<td>Overall (July 2017-June 2018)</td>
<td>3695 (63%)</td>
<td>90835 (73%)</td>
<td></td>
</tr>
</tbody>
</table>
# Long-Term Follow-Up Unblinding Legend for Your Region

<table>
<thead>
<tr>
<th>Index</th>
<th>Medical Center Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>McLaren Bay Region</td>
</tr>
<tr>
<td>2</td>
<td>McLaren Flint</td>
</tr>
<tr>
<td>3</td>
<td>Bronson Methodist Hospital</td>
</tr>
<tr>
<td>4</td>
<td>Bronson Battlecreek Hospital</td>
</tr>
<tr>
<td>5</td>
<td>Ascension Borgess Hospital</td>
</tr>
<tr>
<td>6</td>
<td>McLaren Macomb</td>
</tr>
<tr>
<td>7</td>
<td>University of Michigan</td>
</tr>
<tr>
<td>8</td>
<td>Spectrum Health Hospital</td>
</tr>
<tr>
<td>9</td>
<td>Michigan Vascular Center</td>
</tr>
<tr>
<td>10</td>
<td>Covenant Healthcare</td>
</tr>
<tr>
<td>11</td>
<td>Henry Ford Allegiance Health</td>
</tr>
<tr>
<td>12</td>
<td>Beaumont Royal Oak</td>
</tr>
<tr>
<td>13</td>
<td>Henry Ford Hospital, Detroit MI</td>
</tr>
<tr>
<td>14</td>
<td>St. Joseph Mercy Health System</td>
</tr>
<tr>
<td>15</td>
<td>Vascular Institute of Michigan</td>
</tr>
<tr>
<td>16</td>
<td>DMC Harper University Hospital</td>
</tr>
<tr>
<td>17</td>
<td>NA</td>
</tr>
</tbody>
</table>

---

**Long-Term Follow-Up by Center in Your Region (July 2018-June 2019)**

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

*** Indicates center's rate differs significantly from the regional rate.
Long-Term Follow-Up by Region Across VQI (July 2018-June 2019)

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

"***" Indicates region’s rate differs significantly from the VQI rate.
Discharge Medications

Procedures performed between July 1, 2020 and June 30, 2021
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></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Your Region Overall</td>
<td>3021</td>
<td>89%</td>
<td>7%</td>
<td>3%</td>
<td>1%</td>
</tr>
<tr>
<td>VQI Overall</td>
<td>89002</td>
<td>86%</td>
<td>9%</td>
<td>3%</td>
<td>2%</td>
</tr>
</tbody>
</table>
**Discharge Antiplatelet+Statin by Center in Your Region (July 2020-June 2021)**

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

**Discharge Antiplatelet+Statin by Region Across VQI (July 2020-June 2021)**

- New England
- Nor. Cal.
- Up. Midwest
- Midwest
- G. Lakes
- Mid-America
- Michigan
- Carolinas
- Midsouth
- Others
- VQI
- Pacific NW
- So. Cal.
- SoVO Net
- Virginias
- MidAtlantic
- Canada
- Rocky Mts.
- New York
- Southeast

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

- **Others** indicates centers that do not belong to a regional group.
- **** Indicates region's rate differs significantly from the VQI rate.

*** Indicates center's rate differs significantly from the regional rate.
TFEM CAS ASYMP: Stroke/Death

Procedures performed between July 1, 2020 and June 30, 2021

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></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>85</td>
<td>1751</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td>0%</td>
<td>1.8%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>81</td>
<td>1610</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td>0%</td>
<td>1.7%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of stroke or death among cases with complete data</td>
<td>1.8%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.41</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 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 (July 2020-June 2021)

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 (July 2020-June 2021)

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 July 1, 2020 and June 30, 2021

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>103</td>
<td>1717</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td>7.8%</td>
<td>5.9%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>97</td>
<td>1595</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td>7.2%</td>
<td>6.1%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of stroke or death among cases with complete data</td>
<td>5.1%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.35</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 (July 2020–June 2021)

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 Symptomatic Admissions by Region Across VQI (July 2020–June 2021)

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 ASYMP: Stroke/Death**

Procedures performed between July 1, 2020 and June 30, 2021

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. Procedures with an approach other than Carotid Percutaneous or Carotid Open are also excluded.

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></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>165</td>
<td>4432</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td>1.8%</td>
<td>1.4%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>161</td>
<td>4239</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td>1.9%</td>
<td>1.4%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of stroke or death among cases with complete data</td>
<td>1.2%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.45</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 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 (July 2020–June 2021)

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 (July 2020–June 2021)

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.
TCAR SYMP: Stroke/Death

Procedures performed between July 1, 2020 and June 30, 2021

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. Procedures with an approach other than Carotid Percutaneous or Carotid Open are also excluded.

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>70</td>
<td>2253</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td>2.9%</td>
<td>2.4%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>65</td>
<td>2164</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td>1.5%</td>
<td>2.3%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of stroke or death among cases with complete data</td>
<td>2.8%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>1</td>
<td>NA</td>
<td></td>
</tr>
</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 (July 2020-June 2021)

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 (July 2020–June 2021)

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.
CIA ASYMP: Stroke/Death

Procedures performed between July 1, 2020 and June 30, 2021

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>169</td>
<td>9795</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td>0%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>165</td>
<td>9313</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td>0%</td>
<td>1%</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>0.41</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 (July 2020–June 2021)

- 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 (July 2020–June 2021)

- 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 July 1, 2020 and June 30, 2021

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>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>94</td>
<td>4843</td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td>0%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>93</td>
<td>4660</td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td>0%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Expected rate of stroke or death among cases with complete data</td>
<td>2%</td>
<td>NA</td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.27</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 (July 2020–June 2021)

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 (July 2020–June 2021)

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: Postop LOS>1 Day**

Procedures performed between July 1, 2020 and June 30, 2021

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>169</td>
<td></td>
<td>9798</td>
</tr>
<tr>
<td>Observed rate of LOS&gt;1 day among procedures meeting inclusion criteria</td>
<td>21.3%</td>
<td>22.1%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>165</td>
<td></td>
<td>9330</td>
</tr>
<tr>
<td>Observed rate of LOS&gt;1 day among cases with complete data</td>
<td>20.6%</td>
<td></td>
<td>22%</td>
</tr>
<tr>
<td>Expected rate of LOS&gt;1 day among cases with complete data</td>
<td></td>
<td>21.2%</td>
<td>NA</td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td></td>
<td>0.92</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.
Postop LOS > 1 Day after CEA for Asymptomatic Admissions by Year

Rates shown are observed rates among cases meeting inclusion criteria.
Postop LOS>1 Day after CEA for Asymptomatic Admissions in Your Region (July 2020–June 2021)

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.

Postop LOS>1 Day after CEA for Asymptomatic Admissions by Region Across VQI (July 2020–June 2021)

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: Postop LOS>1 Day**

Procedures performed between July 1, 2020 and June 30, 2021

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>94</td>
<td>4844</td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;1 day among procedures meeting inclusion criteria</td>
<td>34%</td>
<td>40.8%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>93</td>
<td>4681</td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;1 day among cases with complete data</td>
<td>34.4%</td>
<td>40.9%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of LOS&gt;1 day among cases with complete data</td>
<td>42.7%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.12</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.
Postop LOS>1 Day after CEA for Symptomatic Admissions in Your Region (July 2020-June 2021)

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

Centers (centers with <10 complete cases not shown)

Postop LOS>1 Day after CEA for Symptomatic Admissions by Region Across VQI (July 2020-June 2021)

Rates shown are among complete cases. *** indicates region's observed rate differs significantly from its expected rate.
EVAR: Postop LOS>2 Days

Procedures performed between July 1, 2020 and June 30, 2021

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>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>116</td>
<td>6745</td>
</tr>
<tr>
<td>Observed rate of LOS&gt;2 days among procedures meeting inclusion criteria</td>
<td>11.2%</td>
<td>15.8%</td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>105</td>
<td>6187</td>
</tr>
<tr>
<td>Observed rate of LOS&gt;2 days among cases with complete data</td>
<td>11.4%</td>
<td>15.7%</td>
</tr>
<tr>
<td>Expected rate of LOS&gt;2 days among cases with complete data</td>
<td>14.4%</td>
<td>NA</td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.49</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.
Postop LOS>2 Days after EVAR by Year

Rates shown are observed rates among cases meeting inclusion criteria.
Postop LOS > 2 Days after EVAR in Your Region (July 2020–June 2021)

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

Postop LOS > 2 Days after EVAR by Region Across VQI (July 2020–June 2021)

Rates shown are among complete cases. "***" indicates region’s observed rate differs significantly from its expected rate.
EVAR: Sac Diameter Reporting

Procedures performed between July 1, 2018 and June 30, 2019

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>154</td>
<td>6878</td>
<td></td>
</tr>
<tr>
<td>Percentage with sac diameter reported between 9 and 21 months post-procedure</td>
<td>49.4%</td>
<td>56.1%</td>
<td></td>
</tr>
</tbody>
</table>
EVAR Sac Diameter Reporting in Your Region (July 2018–June 2019)

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

EVAR Sac Diameter Reporting by Region Across VQI (July 2018–June 2019)

*** Indicates region’s rate differs significantly from the VQI rate.
EVAR: SVS Sac Size Guideline

Procedures performed between July 1, 2020 and June 30, 2021

Includes Endovascular AAA Repair (EVAR) procedures only. Excludes any non-elective procedure. SVS sac size guideline is ≥5 cm for Women and ≥5.5 cm 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></td>
<td>102</td>
<td>6031</td>
</tr>
<tr>
<td>Percentage meeting SVS sac size guideline</td>
<td></td>
<td>88.2%</td>
<td>74.3%</td>
</tr>
</tbody>
</table>
**EVAR Sac Size Guideline in Your Region (July 2020–June 2021)**

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

**EVAR Sac Size Guideline by Region Across VQI (July 2020–June 2021)**

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

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

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OAAA: In-Hospital Mortality

Procedures performed between **July 1, 2017 and June 30, 2021**.
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>279</td>
<td>4436</td>
<td></td>
</tr>
<tr>
<td>Observed rate of In-Hospital Mortality among procedures meeting inclusion criteria</td>
<td>3.6%</td>
<td>4.4%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>263</td>
<td>4139</td>
<td></td>
</tr>
<tr>
<td>Observed rate of In-Hospital Mortality among cases with complete data</td>
<td>3.8%</td>
<td>4.2%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of In-Hospital Mortality among cases with complete data</td>
<td>4.7%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.66</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.
In-Hospital Death after OAAA in Your Region (July 2017-June 2021)

- 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.

In-Hospital Death after OAAA by Region Across VQI (July 2017-June 2021)

- 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.
**OAAA: SVS Cell-Saver Guideline**

Procedures performed between **July 1, 2017 and June 30, 2021**

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>262</td>
<td>4545</td>
<td></td>
</tr>
<tr>
<td>Percentage meeting SVS cell-saver guideline</td>
<td>92%</td>
<td>92.4%</td>
<td></td>
</tr>
</tbody>
</table>
OAAA Cell-Saver Guideline in Your Region (July 2017–June 2021)

Other centers in your region | Your center
---|---
100% | 100%
90% | 90%
80% | 80%
70% | 70%
60% | 60%
50% | 50%
40% | 40%
30% | 30%
20% | 20%
10% | 10%
0% | 0%

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 (July 2017–June 2021)

SoVONet | New England | Mid-Atlantic | Up | Midwest | Rocky Mtns | Southeast | Virginias | G. Lakes | VQI | Michigan | Nor. Cal | New York | Mid-America | Pacific NW | Carolinas | Canada | Midwest | MidSouth
100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100%

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 **July 1, 2017 and June 30, 2021**

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></td>
<td>296</td>
<td>5087</td>
</tr>
<tr>
<td>Percentage meeting SVS iliac inflow guideline</td>
<td></td>
<td>95.6%</td>
<td>97.4%</td>
</tr>
</tbody>
</table>
OAAA Iliac Inflow Guideline in Your Region (July 2017–June 2021)

Other centers in your region  Your center

Centers (centers with <10 cases not shown)

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

OAAA Iliac Inflow Guideline by Region Across VQI (July 2017–June 2021)

Mid-Atlantic  Mid-America  Up. Midwest  Canada  New England  MidSouth  New York  Carolinas  Virgini


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

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

Procedures performed between July 1, 2020 and June 30, 2021

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>736</td>
<td>13720</td>
</tr>
<tr>
<td>Percentage with ABI/toe pressure assessment</td>
<td></td>
<td>82.2%</td>
<td>75.4%</td>
</tr>
</tbody>
</table>
ABI/Toe Pressure Assessment before PVI for Claudication by Year

July 2017-June 2018
July 2018-June 2019
July 2019-June 2020
July 2020-June 2021

Your Center
Your Region
VQI Overall
ABI/Toe Pressure Assessment before PVI for Claudication in Your Region (July 2020–June 2021)

**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

(July 2020–June 2021)

---

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

Procedures performed between July 1, 2020 and June 30, 2021

Includes Infraguinal 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></td>
<td>117</td>
<td>5410</td>
</tr>
<tr>
<td>Percentage with major complications</td>
<td></td>
<td>4.3%</td>
<td>4.8%</td>
</tr>
</tbody>
</table>
Major Complications after INFRA for CLTI by Year

- July 2017-June 2018
- July 2018-June 2019
- July 2019-June 2020
- July 2020-June 2021

- Your Center
- Your Region
- VQI Overall
**Major Complications after INFRA for CLTI in Your Region (July 2020–June 2021)**

- 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 (July 2020–June 2021)**

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

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

*** Indicates region's rate differs significantly from the VQI rate.
National VQI Update:
Carrie Bosela
SVS PSO Senior Director
Number of Participating Centers

Location of VQI Participating Centers

861 VQI Centers
860 centers in North America
1 center in Singapore
18 Regional Quality Groups
Total Procedures Captured (as of 10/1/2021) 873,059

- Peripheral Vascular Intervention 293,316
- Carotid Endarterectomy 163,871
- Infra-Inguinal Bypass 70,071
- Endovascular AAA Repair 67,405
- Hemodialysis Access 66,675
- Carotid Artery Stent 62,732
- Varicose Vein 49,015
- Supra-Inguinal Bypass 22,661
- Thoracic and Complex EVAR 22,541
- Lower Extremity Amputations 22,572
- IVC Filter 16,407
- Open AAA Repair 15,509
- Vascular Medicine Consult 232
- Venous Stent 52

VQI Total Procedure Volume

Total Procedure Volume tab reflects net procedures added to the registry for the month
VQI wants to help medical students, residents and fellows learn about quality improvement.
Trainee engagement

**Purpose:**
To foster understanding of quality process and metrics among Vascular Surgery Residents, Fellow and Medical Students (‘trainees’) through mentorship in the Vascular Quality Initiative (VQI) in collaboration with the Association of Program Directors in Vascular Surgery (APDVS).

**Proposal:**
The SVS/PSO proposes a mentorship program for trainees to learn about surgical quality improvement and research with a focus on vascular disease. Selection of FITs would come from application to the Society for Vascular Surgery (SVS) Patient Safety Organization (PSO) VQI. FITs will be assigned a mentor(s) within one of eighteen VQI Regional Quality Groups as directed by the SVS PSO Governing Council and staff. Any active VQI member meeting requirements can volunteer to serve as a mentor in the program. Regional or Associate Medical Directors are strongly encouraged to take a leadership role in this initiative. The program will eventually be offered to medical students.
PSO Diversity Equity and Inclusion (DEI) Committee

• VQI Representatives
  – Dr. Leila Mureebe – Chair
  – Dr. Carla Moreiro – Vice-Chair
  – Dr. Samantha Minc
  – Dr. Patricia Fernandez
  – Dr. Mina Boutros
  – Dr. Rafael Malgor
SVS PSO DEI Committee:

**Purpose:**

Recognizing the need for diversity of perspectives to help eliminate bias in the governance and leadership activities of the SVS PSO, the SVS PSO Diversity Committee will work with SVS PSO Councils and Committees to ensure representation of all VQI stakeholders.

**Major Initial Initiative:**

The initial task for the PSO DEI Committee is to develop a baseline understanding of the demographics of the physicians participating in the VQI. The Committee has developed the construct of a survey instrument, which will be launched in September 2021.
The 2021 VQI Annual Meeting was a huge success!

This year, VQI@VAM was a hybrid meeting with all sessions live-streamed. The meeting had approximately 175 attendees participating either remotely or in person throughout the two days.

Thank you to each of our presenters. We appreciate the time and talents you contribute to making this meeting better every year. The information presented was excellent.

Once again, we had amazing poster presentations! Congratulations to Priya Padmanabhan, MHA; Rosha Nodine, BAAS from Baylor Scott & White Health System for winning the ‘VQI member favorite poster’ with their poster “VQI Summary Report Tool in EPIC”.

This year, we added a new poster award called the ‘PSO Director Award’. Congratulations to Donna Fleming, MSN, RN, from Cleveland Clinic for winning this new award with her poster “AAA Size Appropriateness Quality Project”.

**Reminder – If you did a quality presentation using VQI data at any SVS sessions during VAM, you must email bwymer@svspso.org to receive credit for that presentation. Please provide your presentation, as well as your center name. All VQI@VAM presentations have already been given credit.**
We have achieved this remarkable milestone because of your participation and efforts. Thank you for all that you do to make the VQI a success.
COVID-19 Update

Review of primary outcomes in VQI Registry Data since insertion of COVID variables (Sept ’20 through Feb ’21) yielded the following results:

- Overall, > 97% of variable inclusion rate for COVID status in all registries
- Only 1.2% of patients tested positive for COVID-19 → restrictive practices in place and/or patient hesitation/reluctance to seek treatment during pandemic
- Baseline overall mortality across registries of 1.4% rose to 1.6% during time interval while baseline mortality for elective patients who were asymptomatic and COVID (Test negative) remained unchanged
- Patients having a COVID (Test positive) yet Asymptomatic had mortality > twice that of -COVID test patients (OR 2.4)
- Presence of any COVID symptom (aggregate) had mortality of ~4.6 times that of an Asymptomatic and ( Test negative) patient (OR 5)
- Mortality of Symptomatic and Intubated patient exceeded 33% across registries
- There was minimal difference in mortality across geographic regions
- Further evaluation will be done on secondary procedure outcomes such as MI, CHF, respiratory failure, graft failure etc.
- LTFU analysis of COVID variable data will require waiting until Sept 2023 for completeness.
The SVS 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 an important need to learn and measure the patient’s perspective.

The My PAD pilot launched April 2021 and includes 20 SVS VQI centers participating in the Peripheral Vascular Intervention Registry. The pilot will test center workflow and seeks to improve PRO collection in the least burdensome manner by leveraging technology, such as smart phones and tablets.
**Highlights**

- Outpatient peripheral vascular interventions (PVI) for claudication or chronic limb threatening ischemia
- Collect VascuQoL-6 and EuroQoL 5D-5L (estimated completion time 10-15 minutes)
- Collection at three time points: pre-procedure, one month and one year postoperatively
- PRO data entry options include paper forms, computer, tablet and smartphone
- Educational materials for direct from patient data entry
- PRO feedback to participating physicians
Quality Improvement Update

Fall 2021
Welcome to our new SVS PSO Director of Quality!!!

Over the years, Betsy has developed innovative approaches to quality and education for various populations. She has twenty plus years of clinical expertise! As a doctorate prepared nurse, she will apply theory, quality, and research to support the VQI Mission!

Betsy comes to us from ACC/NCDR and we look forward to having her on the VQI team!
Quality Improvement Resources:

- Quarterly Webinars
- Monthly “VQI News”
- QI Project Guide Supplement

The Vascular Quality Initiative | Quality Improvement Tools (vqi.org)
National QI project details

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

• Visit the VQI Members Only Website for sample charters, webinars, and presentations on VQI Quality Improvement Projects. www.vqi.org
Participation Awards
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
2021 Participation Award:

Effective immediately the Participation Committee unanimously voted to re-instate LTFU criteria in the 2021 Participation Awards

The following is a list of the four domains for the 2021 Participation Awards criteria:

Domain 1 – LTFU – 40% weighted
Domain 2 – Regional Meeting attendance – 30% weighted
Domain 3 – QI Project – 20% weighted
Domain 4 – Registry subscriptions – 10% weighted

The final score is calculated as follows:

Total points = 4 x LTFU score + 3 x Attendance score + 2 x QI score + 1 x registry score
Arterial Quality Council:
Mitchell Weaver, MD
AQC Update:

• Development Priorities for end of 2021/ early 2022
  o Infra/Supra revisions goal to complete by end of 2021
  o OAAA revision goal to complete by end of Q2 2022

• New “Pathways” follow up reports
  o CAS, EVAR available
  o CEA, TEVAR, PVI, HDA available late 2021 - early 2022
  o All other registries to follow
AQC Update:

- Clinical Appropriateness Performance Indicators (CAPI reports)
  - Aligning with SVS Guidelines

- Standard Operative Notes
  - We have resumed talks with Epic and have restarted the initiative to create standard op notes, which will enable automated data abstract, based on the standardized notes. This functionality would be available to all Epic users.

- Registry Specific Quality Improvement Initiatives

- Patient Reported Outcomes: My PAD PRO Pilot PVI

- Opioid variables: Infra-Inguinal – Available August

- Registry Education: recorded sessions!!
  - All available on VQI.org [https://www.vqi.org/resources/webinars-events/](https://www.vqi.org/resources/webinars-events/)
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:
Jennifer Watson, 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
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
### 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
Arterial Research Advisory Council:
Nicholas Osborne, MD
New RAC Education!!

Dr. Leila Mureebe,
SVS PSO Associate Medical Director

- Creating videos on how to submit a RAC Proposal for “success”
- Creating useful tools and tips to train new investigators
- Audible bleeding podcast!!!
1. Review list of projects: https://www.vqi.org/data-analysis/rac-approved-project-search/
2. Submit proposal online: http://abstracts123.com/svs1/meetinglogin
3. Deadlines for submissions: The Vascular Quality Initiative | National Arterial and Venous RAC Schedules (vqi.org)
VISION: Vascular Implant Surveillance and Interventional Outcomes Network.

- It is a partnership between the Society for Vascular Surgery Patient Safety Organization’s Vascular Quality Initiative (SVS PSO) and Medical Device Epidemiology Network (MDEpiNet). The goal is to improve the quality, safety and effectiveness of vascular care.

- VISION developed algorithms, which allows certain VQI registry patients to be matched to Medicare claims data. Claims linkage allows very complete follow up on CMS patients (greater than 65 years of age, dialysis, etc).

- VISION’s primary goal is to facilitate low-cost, high-value and real-world evidence research through the creation of a national repository of linked clinical-claims analytic data sets. The secondary objectives are to measure the safety and effectiveness of vascular devices.
VISION: SRS Reports!

- The Vascular Quality Initiative is pleased to provide participating members with center-specific Survival, Reintervention, and Surveillance Reports (SRS).

- SRS reports are produced by the VQI as part of the Vascular Implant Surveillance and Interventional Outcomes Network (VISION) Project, a partnership between the VQI and the Medical Device Epidemiology Network (MDEpiNet). The reports are based on VQI-Medicare linked data. Each report shows each center’s long-term performance when compared to the VQI for Medicare patients undergoing the following procedures:
  - endovascular abdominal aortic aneurysm repairs (EVAR)
  - elective abdominal aortic aneurysm repair (EVAR + Open AAA)
  - carotid endarterectomy for asymptomatic stenosis
  - carotid artery stent procedures (TCAR and transfemoral procedures) for asymptomatic stenosis

- FAQs on the methods and definitions used to generate these reports can be found on the VQI Website (VQI.org). The goal of the SRS reports is to help VQI members assess their performance on these important metrics compared to the rest of the VQI and to improve the quality of vascular care at their center.
Questions?