VSGNE

November 8th 2019
10:00 AM – 4:00 PM EST
Maine Medical Center
Portland, ME
PLEASE SIGN THE ATTENDANCE SHEET
Agenda - Morning

10:00 -10:10 Welcome by Dr. Philip Goodney and Dr. Brian Nolan (Maine Medical Center)

10:10am – 11:10am National Committee Update I:
- Regional Reports Review – P Goodney / J Jorgensen (45 min)
- LTFU Update – J Jorgensen (10 min)
- VQI National Research Advisory Council Update – P Goodney (5 min)

11:10am-11:50am VSGNE Quality Improvement Project Updates (Moderator, P Goodney)
- N Aranson/B Nolan - Improving Care for Patients Undergoing Transcarotid Artery Revascularization Using a Novel Preoperative Risk Assessment Tool
- D Jones – Reducing Postoperative Hospital Utilization through Improved Discharge Planning After Lower Extremity Revascularization
- T Kim – A pilot study of a comprehensive multidisciplinary inpatient-based approach to smoking cessation for patients with vascular disease
- A Barnes - Anticoagulation and Antiplatelet Treatment Plan Communication and Documentation Improvement Project
- Panel Discussion (Nolan & Aranson/Jones/Chaar/Barnes): What should we do with our findings from the QIPs?

11:50am-12:45pm Lunch Break
Agenda - Afternoon

12:50pm-1:00pm National Committee Update II:
- Arterial Quality Council Update – J Simons (5 min)
- Venous Quality Council Update – P Goodney (5 min)
- Governing Council Update – J Jorgensen (10 min)

1:00pm – 1:15pm Data Managers Update – P Bozeman
1:15pm – 1:25pm RAPID/SPEED Update – J Jorgensen
1:25pm – 1:40pm Paclitaxel Working Group Update - J Jorgensen
1:40pm – 2:00pm Carotid Complexities: TCAR, Transfemoral, CEA (Panel)
2:00pm - 3:15pm VSGNE RAC Update (J Siracuse, Moderator)
3:15pm – 3:30pm Meeting Evaluation
Welcome and Introductions

Backus Hospital
Baystate Medical Center
Berkshire Medical Center
Beth Israel Deaconess Medical Center
Boston Medical Center
Brigham and Women's Hospital
Cape Cod Hospital
Catholic Medical Center; CTSA NH
Central Maine Medical Center
Charlton Memorial Hospital
Concord Hospital
Danbury Hospital
Dartmouth Hitchcock Medical Center
Diagnostic Imaging of Milford
Elliot Health System
Hartford Hospital
Hoenig Vascular Center
Lahey Hospital and Medical Center
Lakes Region General Hospital
Maine Medical Center
MaineGeneral Medical Center
Massachusetts General Hospital
Middlesex Hospital
Midstate Medical Center (New)
Northern Light Eastern Maine Medical Center
Norwalk Hospital
Portsmouth Regional Hospital
Rhode Island Hospital
Saint Francis Hospital
St. Elizabeth Medical Center
St. Luke's Hospital
Steward Good Samaritan Medical Center
Steward Saint Anne's Hospital
The Hospital of Central Connecticut
The Miriam Hospital
Tufts Medical Center
U Mass Memorial
University of Vermont Medical Center
Yale-New Haven Hospital
<table>
<thead>
<tr>
<th>Potential Sites</th>
<th>Norwalk Hosp</th>
<th>Norwalk, CT</th>
<th>Contracting</th>
<th>Norwalk Hosp</th>
<th>Norwalk, CT</th>
<th>Contracting</th>
<th>Norwalk Hosp</th>
<th>Norwalk, CT</th>
<th>Contracting</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Dempsey Hospital</td>
<td></td>
<td>Farmington, CT</td>
<td>Contracting</td>
<td></td>
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<tr>
<td>The Vascular Experts, Southern Connecticut Vascular Center</td>
<td></td>
<td>Stamford, CT</td>
<td>Proposal</td>
<td>Dr. Paul Gagne</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Stamford Hospital</td>
<td></td>
<td>Stamford, CT</td>
<td>Proposal</td>
<td>Dr. Timothy Manoni</td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Exeter Hospital</td>
<td></td>
<td>Exeter, NH</td>
<td>Qualified</td>
<td>Dr. Eric Leefmans</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Mercy Medical Center</td>
<td></td>
<td>Springfield, MA</td>
<td>Qualified</td>
<td>Dr. Sandio Maru</td>
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</tr>
</tbody>
</table>
Regional Reports:

Philip Goodney, MD

Notes:
1) In all reports, regional data are not shown for regions with <3 centers participating in the applicable registry.
2) In “by Center” bar charts, unless noted, data are not shown for centers with <10 cases.
3) In all graphics, “*” indicates a p-value<.05.
4) This report includes all data that had been entered into the VQI as of June 30, 2018.
Dashboard

The table below summarizes your center’s results as presented in each of the subsequent reports and provides regional and national benchmarks for comparison. In the “Your Center” column, percentages represent the rate of cases with the noted outcome. Numbers in parentheses are the number of cases with the outcome/the total number of cases meeting the exclusion criteria (see the full report for details). In the “Region” and “VQI” columns, the numbers represent the 25th, 50th (median) and 75th percentiles for centers in your region and across all centers in the VQI.

Your center’s results are highlighted in green if your center is at or above the top 25th percentile nationally, in yellow if your center is among the middle 50% of centers, and in red if at or below the bottom 25th percentile.
| Registry                        | Outcome                                      | Your Center % (n/N) | Your Region [25p|50p|75p] | VQI Overall [25p|50p|75p] |
|--------------------------------|----------------------------------------------|---------------------|---------------------------|--------------------------|
| All                            | Total Procedure Volume                       | [38 | 145 | 349]           | [31 | 111 | 273]              |
| Multiple (July 2016-June 2017) | Long-Term Follow-Up                          | [45% | 68% | 84%]          | [38% | 70% | 86%]              |
| Multiple                       | Discharge Medications                        | [83% | 87% | 91%]          | [76% | 84% | 92%]              |
| AVACCESS                       | Primary AVF vs. Graft                         | [85% | 90% | 98%]          | [78% | 86% | 94%]              |
| CAS                            | In-Hospital Stroke/Death                     | [0% | 0% | 0%]           | [0% | 0% | 0%]              |
| CEA                            | In-Hospital Stroke/Death                     | [0% | 0% | 0%]           | [0% | 0% | 0%]              |
| CEA                            | LOS>1 Day                                    | [35% | 22% | 11%]          | [31% | 19% | 12%]              |
| EVAR                           | LOS>2 Days                                   | [15% | 10% | 0%]           | [18% | 10% | 0%]              |
| EVAR (July 2016-June 2017)     | Sac Diameter Reported at LTFU                | [39% | 68% | 78%]          | [33% | 62% | 76%]              |
| INFRA                          | Major Complications                          | [5% | 0% | 0%]           | [6% | 0% | 0%]              |
| IVCF (January-December 2018)   | Filter Retrieval                             | NA (<3 centers)   | [0% | 8% | 39%]              |
| LEAMP                          | Postop Complications                         | [25% | 14% | 9%]           | [15% | 11% | 3%]              |
| OAAA                           | In-Hospital Mortality                        | [17% | 0% | 0%]           | [0% | 0% | 0%]              |
| PVI                            | ABI/Toe Pressure Reported                    | [71% | 81% | 96%]          | [68% | 83% | 93%]              |
| SUPRA                          | Postop Complications                         | [8% | 0% | 0%]           | [0% | 0% | 0%]              |
| TEVAR (July 2016-June 2017)    | Sac Diameter Reported at LTFU                | [11% | 64% | 81%]          | [20% | 50% | 71%]              |
| EVAR                           | Sac Size Guideline                           | [69% | 80% | 86%]          | [63% | 74% | 83%]              |
Total Procedure Volume

Procedures performed between June 1, 2018 and May 31, 2019

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

Data for this report include all cases with surgery date between June 1, 2018 and May 31, 2019, that had been entered into the VQI as of June 30, 2019.

<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>AVACCESS</td>
<td></td>
<td>402</td>
<td>6748</td>
</tr>
<tr>
<td>CAS</td>
<td></td>
<td>589</td>
<td>7817</td>
</tr>
<tr>
<td>CEA</td>
<td></td>
<td>1611</td>
<td>17482</td>
</tr>
<tr>
<td>EVAR</td>
<td></td>
<td>581</td>
<td>6674</td>
</tr>
<tr>
<td>INFRA</td>
<td></td>
<td>760</td>
<td>6308</td>
</tr>
<tr>
<td>IVCF</td>
<td></td>
<td>NA (&lt;3 centers)</td>
<td>1708</td>
</tr>
<tr>
<td>LEAMP</td>
<td></td>
<td>322</td>
<td>3035</td>
</tr>
<tr>
<td>OAAA</td>
<td></td>
<td>205</td>
<td>1240</td>
</tr>
<tr>
<td>PVI</td>
<td></td>
<td>3631</td>
<td>32595</td>
</tr>
<tr>
<td>SUPRA</td>
<td></td>
<td>285</td>
<td>2047</td>
</tr>
<tr>
<td>TEVAR</td>
<td></td>
<td>251</td>
<td>2460</td>
</tr>
<tr>
<td>Varicose Veins</td>
<td></td>
<td>NA (&lt;3 centers)</td>
<td>7372</td>
</tr>
<tr>
<td>Overall (June 2018-May 2019)</td>
<td></td>
<td>8651</td>
<td>95486</td>
</tr>
<tr>
<td>Overall (June 2017-May 2018)</td>
<td></td>
<td>9778</td>
<td>101908</td>
</tr>
</tbody>
</table>
# Total Procedure Volume, All Years

Includes all procedures with surgery date through May 31, 2019.

<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>AVACCESS</td>
<td>4567</td>
<td>46748</td>
<td></td>
</tr>
<tr>
<td>CAS</td>
<td>3508</td>
<td>30284</td>
<td></td>
</tr>
<tr>
<td>CEA</td>
<td>23547</td>
<td>121871</td>
<td></td>
</tr>
<tr>
<td>EVAR</td>
<td>7872</td>
<td>47972</td>
<td></td>
</tr>
<tr>
<td>INFRA</td>
<td>13089</td>
<td>52373</td>
<td></td>
</tr>
<tr>
<td>IVCF</td>
<td>NA (&lt;3 centers)</td>
<td>12067</td>
<td></td>
</tr>
<tr>
<td>LEAMP</td>
<td>1366</td>
<td>14276</td>
<td></td>
</tr>
<tr>
<td>OAAA</td>
<td>3729</td>
<td>12200</td>
<td></td>
</tr>
<tr>
<td>PVI</td>
<td>28553</td>
<td>187177</td>
<td></td>
</tr>
<tr>
<td>SUPRA</td>
<td>3697</td>
<td>17230</td>
<td></td>
</tr>
<tr>
<td>TEVAR</td>
<td>1609</td>
<td>13954</td>
<td></td>
</tr>
<tr>
<td>Varicose Veins</td>
<td>NA (&lt;3 centers)</td>
<td></td>
<td>30094</td>
</tr>
<tr>
<td>Overall</td>
<td>92949</td>
<td></td>
<td>586246</td>
</tr>
</tbody>
</table>
Physician Specialties Across Your Region (as of June 30, 2019, N=295 Physicians)
Hemodialysis Access: Percentage of Primary AVF vs. Graft

Procedures performed between June 1, 2018 and May 31, 2019
Excludes patients with previous access procedure in the same arm.

Data for this report include all cases with surgery date between June 1, 2018 and May 31, 2019, that had been entered into the VQI as of June 30, 2019. The table below shows the number of access procedures meeting the inclusion criteria in the VQI, and the percentage of those cases that were AVF vs. graft.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of access procedures meeting inclusion criteria</td>
<td></td>
<td>322</td>
<td>5351</td>
</tr>
<tr>
<td>Percentage with primary AVF</td>
<td></td>
<td>89%</td>
<td>83%</td>
</tr>
</tbody>
</table>
Rate of Primary AVF Access by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of Primary AVF Access in Your Region (June 2018-May 2019)

- Other centers in your region
- Your center

Centers (centers with <10 cases not shown)

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

Rate of Primary AVF Access by Region Across VQI (June 2018-May 2019)

- Carolinas*
- Southeast*
- Michigan*
- Mid-Atlantic*
- Mid-America
- VQI
- Rocky Mtns.
- Virgias
- G. Lakes
- New York*
- Midwest*
- New England*
- MidSouth*

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

“**” indicates region’s rate differs significantly from the VQI rate.
Carotid Artery Stent: Stroke or Death in Hospital

Procedures performed between June 1, 2018 and May 31, 2019

Asymptomatic admissions, excluding prior ipsilateral CAS, CAS for intracranial treatment and dissection, trauma and “other” lesion types. Asymptomatic patients are those who had no ipsilateral or contralateral TIA or stroke within 120 days prior to surgery.

Data for this report include all cases with surgery date between June 1, 2018 and May 31, 2019, that had been entered into the VQI as of June 30, 2019. The table below shows the number of CAS procedures meeting the inclusion criteria in the VQI, 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 CAS procedures meeting inclusion criteria</td>
<td>302</td>
<td>4233</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td>1.7%</td>
<td>1.5%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>281</td>
<td>3869</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td>1.8%</td>
<td>1.5%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of stroke or death among cases with complete data*</td>
<td>1.6%</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0.81</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

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

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of In-Hospital Stroke or Death After CAS in Your Region (June 2018-May 2019)

Centers (centers with <10 cases not shown)

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

Rate of In-Hospital Stroke or Death After CAS by Region Across VQI (June 2018-May 2019)

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

*** indicates region’s observed rate differs significantly from its expected rate.
Carotid Endarterectomy: Stroke or Death in Hospital

Procedures performed between June 1, 2018 and May 31, 2019

Asymptomatic admissions, excluding prior ipsilateral CEA and concomitant CABG, endovascular or other arterial procedure. Asymptomatic patients are those who had no ipsilateral or contralateral TIA or stroke within 120 days prior to surgery.

Data for this report include all cases with surgery date between June 1, 2018 and May 31, 2019, that had been entered into the VQI as of June 30, 2019. The table below shows the number of CEA procedures meeting the inclusion criteria in the VQI, 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>877</td>
<td>10534</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among procedures meeting inclusion criteria</td>
<td>0.9%</td>
<td>0.8%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>837</td>
<td>10001</td>
<td></td>
</tr>
<tr>
<td>Observed rate of stroke or death among cases with complete data</td>
<td>0.8%</td>
<td>0.8%</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>1</td>
<td>NA</td>
<td></td>
</tr>
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</table>

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

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of In-Hospital Stroke or Death After CEA in Your Region (June 2018-May 2019)

Centers (centers with <10 cases not shown)

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

Rate of In-Hospital Stroke or Death After CEA by Region Across VQI (June 2018-May 2019)

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

"**" indicates region's observed rate differs significantly from its expected rate.
Carotid Endarterectomy: Percentage of Patients with LOS>1 Day

Procedures performed between June 1, 2018 and May 31, 2019

Asymptomatic admissions, excluding prior ipsilateral CEA, concomitant CABG, proximal endovascular or other arterial operation, in-hospital death with LOS<=1 day, procedures done on weekends or not done on admission day. LOS is based on the midnight rule used for hospital billing. Asymptomatic patients are those who had no ipsilateral or contralateral TIA or stroke within 120 days prior to surgery.

Data for this report include all cases with surgery date between June 1, 2018 and May 31, 2019, that had been entered into the VQI as of June 30, 2019. The table below shows the number of CEA procedures meeting inclusion criteria in the VQI, and the observed and expected rates of those cases with LOS>1 Day.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of CEA procedures meeting inclusion criteria</td>
<td>839</td>
<td>802</td>
<td>9826</td>
</tr>
<tr>
<td>Observed rate of LOS&gt;1 day among procedures meeting inclusion criteria</td>
<td>25%</td>
<td>22%</td>
<td>22%</td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>839</td>
<td>802</td>
<td>9826</td>
</tr>
<tr>
<td>Observed rate of LOS&gt;1 day among cases with complete data</td>
<td>25%</td>
<td>22%</td>
<td>22%</td>
</tr>
<tr>
<td>Expected rate of LOS&gt;1 day among cases with complete data*</td>
<td>21%</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>P-value for comparison of observed and expected rates</td>
<td>0</td>
<td>NA</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.
Rate of CEA Patients With LOS > 1 Day by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of CEA Patients With LOS >1 Day in Your Region (June 2018-May 2019)

Other centers in your region

Your center

Observed

Expected

Rate of CEA Patients With LOS >1 Day by Region Across VQI (June 2018-May 2019)

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

Observed

Expected

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

*** indicates region's observed rate differs significantly from its expected rate.
Endovascular AAA Repair: Percentage of Patients with LOS>2 Days

Procedures performed between June 1, 2018 and May 31, 2019

Excludes ruptured aneurysms and in-hospital deaths with LOS≤2 days, patients with prior aortic surgery, patients transferred from another hospital, procedures not done on day of admission and weekend procedures. LOS is based on the midnight rule used for hospital billing.

Data for this report include all cases with surgery date between June 1, 2018 and May 31, 2019, that had been entered into the VQI as of June 30, 2019. The table below shows the number of EVAR procedures meeting the inclusion criteria and the observed and expected rates of those cases with LOS>2 Days.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of EVAR procedures meeting inclusion criteria</td>
<td>464</td>
<td>5182</td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;2 days among procedures meeting inclusion criteria</td>
<td>10%</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>444</td>
<td>4820</td>
<td></td>
</tr>
<tr>
<td>Observed rate of LOS&gt;2 days among cases with complete data</td>
<td>10%</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of LOS&gt;2 days among cases with complete data*</td>
<td>12%</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>
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*“Expected rate” is the rate estimated by a statistical model that accounts for patient characteristics, including age, gender, race, BMI, comorbidities, medication and stroke and vascular history. “Cases with complete data” include patients who have data on all of those factors.
Rate of EVAR Patients With LOS>2 Days by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of EVAR Patients With LOS>2 Days in Your Region (June 2018-May 2019)

Centers (centers with <10 cases not shown)

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

Rate of EVAR Patients With LOS>2 Days by Region Across VQI (June 2018-May 2019)

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

"**" indicates region’s observed rate differs significantly from its expected rate.
EVAR: Rate of Sac Diameter Reporting at Long-Term Follow-Up

Procedures performed between July 1, 2016 and June 30, 2017
Excludes patients who died within 21 months of surgery.

Data for this report include all cases with surgery date between July 1, 2016 and June 30, 2017, that had been entered into the VQI as of June 30, 2019. The table below shows the number of EVAR procedures in the VQI, and the percentage of those cases in which the patient had a follow-up visit between 9 and 21 months post-surgery at which a sac diameter was recorded.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of EVAR procedures</td>
<td></td>
<td>573</td>
<td>6150</td>
</tr>
<tr>
<td>Percentage with sac diameter recorded at follow-up</td>
<td></td>
<td>62%</td>
<td>57%</td>
</tr>
</tbody>
</table>
Rate of LTFU Sac Diameter Reporting by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of LTFU Sac Diameter Reporting in Your Region (July 2016-June 2017)

- Other centers in your region
- Your center

Centers (centers with <10 cases not shown)

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

Rate of LTFU Sac Diameter Reporting by Region Across VQI (July 2016-June 2017)

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

"***" indicates region’s rate differs significantly from the VQI rate.
Infringuinal Bypass: Rate of Major Complications

Procedures performed between June 1, 2018 and May 31, 2019

Includes only patients with indication of rest pain or tissue loss. Major complications are defined as in-hospital death, ipsilateral BK or AK amputation or graft occlusion.

Data for this report include all cases with surgery date between June 1, 2018 and May 31, 2019, that had been entered into the VQI as of June 30, 2019. The table below shows the number of INFRA cases with indication of rest pain or tissue loss in the VQI, and the percentage of those cases that resulted in in-hospital death, ipsilateral 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>477</td>
<td>3930</td>
<td></td>
</tr>
<tr>
<td>Percentage with major complications after INFRA</td>
<td>2.5%</td>
<td>3.8%</td>
<td></td>
</tr>
</tbody>
</table>
Rate of Major Complications After INFRA by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of Major Complications After INFRA in Your Region (June 2018-May 2019)

Centers (centers with <10 cases not shown)

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

Rate of Major Complications After INFRA by Region Across VQI (June 2018-May 2019)

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

“***” indicates region’s rate differs significantly from the VQI rate.
IVCF: Percentage of Temporary Filters With Retrieval or Attempt at Retrieval

Procedures performed between January 1 and December 31, 2018
Excludes patients with permanent filters and patients who have died since discharge.

Data for this report include all cases with surgery date between January 1 and December 31, 2018, that had been entered into the VQI as of June 30, 2019. The table below shows the number of IVCF procedures meeting the inclusion criteria in the VQI, and the percentage of those cases in which the filter was retrieved, or an attempt was made to retrieve it, at any time post-procedure.

<table>
<thead>
<tr>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NA (&lt;3 centers)</td>
<td></td>
</tr>
<tr>
<td>Number of procedures meeting inclusion criteria</td>
<td></td>
<td>1428</td>
</tr>
<tr>
<td>Percentage with filter retrieval, or attempt at retrieval</td>
<td></td>
<td>32%</td>
</tr>
<tr>
<td>Percentage not retrieved because not clinically indicated</td>
<td></td>
<td>5%</td>
</tr>
<tr>
<td>Percentage not retrieved because patient declined</td>
<td></td>
<td>1%</td>
</tr>
</tbody>
</table>
Rate of IVCF Retrieval by Region Across VQI (January-December 2018)

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

*** indicates region’s rate differs significantly from the VQI rate.
Lower-Extremity Amputation: Rate of Postop Complications

Procedures performed between June 1, 2018 and May 31, 2019

Complications are defined as myocardial infarction, dysrhythmia, congestive heart failure, surgical site infection, renal and/or respiratory complication.

Data for this report include all cases with surgery date between June 1, 2018 and May 31, 2019, that had been entered into the VQI as of June 30, 2019. The table below shows the number of LEAMP cases in the VQI, and the percentage of those cases that resulted in 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 amputation procedures</td>
<td></td>
<td>322</td>
<td>3029</td>
</tr>
<tr>
<td>Percentage with complications after LEAMP</td>
<td></td>
<td>17%</td>
<td>11%</td>
</tr>
</tbody>
</table>
Rate of Complications After LEAMP by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of Complications After LEAMP in Your Region (June 2018-May 2019)

- Other centers in your region
- Your center

Centers (centers with <10 cases not shown)

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

Rate of Complications After LEAMP by Region Across VQI (June 2018-May 2019)

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

** indicates region's rate differs significantly from the VQI rate.
Non-Ruptured Open AAA: In-Hospital Mortality

Procedures performed between June 1, 2018 and May 31, 2019

Excludes ruptured aneurysms.

Data for this report include all cases with surgery date between June 1, 2018 and May 31, 2019, that had been entered into the VQI as of June 30, 2019. The table below shows the number of OAAA procedures meeting the inclusion criteria in the VQI, 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>175</td>
<td>1009</td>
<td></td>
</tr>
<tr>
<td>Observed rate of in-hospital death among procedures meeting inclusion criteria</td>
<td>5.1%</td>
<td>4.2%</td>
<td></td>
</tr>
<tr>
<td>Number of procedures with complete data*</td>
<td>157</td>
<td>914</td>
<td></td>
</tr>
<tr>
<td>Observed rate of in-hospital death among cases with complete data</td>
<td>5.7%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Expected rate of in-hospital death among cases with complete data*</td>
<td>4.5%</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>
<tr>
<td>Observed rate of in-hospital death among procedures with infrarenal proximal clamp</td>
<td>3.8%</td>
<td>2.6%</td>
<td></td>
</tr>
<tr>
<td>Observed rate of in-hospital death among procedures with suprarenal proximal clamp</td>
<td>6.2%</td>
<td>5.7%</td>
<td></td>
</tr>
</tbody>
</table>

*“Expected rate” is the rate estimated by a statistical model that accounts for patient characteristics, including age, gender, race, BMI, comorbidities, medication and stroke and vascular history. “Cases with complete data” include patients who have data on all of those factors.
Rate of In-Hospital Death After OAAA by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of In-Hospital Death After OAAA in Your Region (June 2018-May 2019)

Centers (centers with <10 cases not shown)

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

Rate of In-Hospital Death After OAAA by Region Across VQI (June 2018-May 2019)

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

"**" indicates region's observed rate differs significantly from its expected rate.
PVI: Percentage of Claudicants with ABI/Toe Pressure Reported Before Procedure

Procedures performed between June 1, 2018 and May 31, 2019

“ABI or toe pressure reported” indicates at least one measure was recorded for the side of the operation, or on both sides for bilateral and aortic procedures.

Data for this report include all cases with surgery date between June 1, 2018 and May 31, 2019, that had been entered into the VQI as of June 30, 2019. The table below shows the number of PVI procedures with indication of claudication in the VQI, and the percentage of those cases in which ABI or toe pressure was recorded.

<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 with indication of claudication</td>
<td>1306</td>
<td>12890</td>
<td></td>
</tr>
<tr>
<td>Percentage with ABI/toe pressure recorded before procedure</td>
<td>78%</td>
<td>77%</td>
<td></td>
</tr>
<tr>
<td>Percentage who were current smokers</td>
<td>32%</td>
<td>38%</td>
<td></td>
</tr>
</tbody>
</table>
Rate of ABI/Toe Pressure Assessment Before PVI by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of ABI/Toe Pressure Assessment Before PVI in Your Region (June 2018-May 2019)

- Other centers in your region
- Your center

Centers (centers with <10 cases not shown)

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

Rate of ABI/Toe Pressure Assessment Before PVI by Region Across VQI (June 2018-May 2019)

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

“***” indicates region’s rate differs significantly from the VQI rate.
Suprainguinal Bypass: Rate of Major Complications

Procedures performed between June 1, 2018 and May 31, 2019

Includes only patients with indication of rest pain or tissue loss. Major complications are defined as in-hospital death, ipsilateral BK or AK amputation or graft occlusion.

Data for this report include all cases with surgery date between June 1, 2018 and May 31, 2019, that had been entered into the VQI as of June 30, 2019. The table below shows the number of SUPRA cases in the VQI, and the percentage of those cases that resulted in complications.

<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</td>
<td></td>
<td>118</td>
<td>803</td>
</tr>
<tr>
<td>Percentage with major complications after SUPRA</td>
<td></td>
<td>5%</td>
<td>5%</td>
</tr>
</tbody>
</table>
Rate of Major Complications After SUPRA by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of Major Complications After SUPRA in Your Region (June 2018-May 2019)

Centers (centers with <10 cases not shown)

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

Rate of Major Complications After SUPRA by Region Across VQI (June 2018-May 2019)

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

"**" indicates region's rate differs significantly from the VQI rate.
TEVAR: Rate of Sac Diameter Reporting at Long-Term Follow-Up

Procedures performed between July 1, 2016 and June 30, 2017

Includes only patients with Pathology=aneurysm or aneurysm from dissection. Excludes patients who died within 21 months of surgery.

Data for this report include all cases with surgery date between July 1, 2016 and June 30, 2017, that had been entered into the VQI as of June 30, 2019. The table below shows the number of TEVAR procedures in the VQI, and the percentage of those cases in which the patient had a follow-up visit between 9 and 21 months post-surgery at which a sac diameter was recorded.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of TEVAR procedures</td>
<td></td>
<td>133</td>
<td>1234</td>
</tr>
<tr>
<td>Percentage with sac diameter recorded at follow-up</td>
<td></td>
<td>71%</td>
<td>50%</td>
</tr>
</tbody>
</table>
Rate of LTFU Sac Diameter Reporting by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of LTFU Sac Diameter Reporting in Your Region (July 2016-June 2017)

- Other centers in your region
- Your center

Centers (centers with <10 cases not shown)

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

Rate of LTFU Sac Diameter Reporting by Region Across VQI (July 2016-June 2017)

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

*** indicates region's rate differs significantly from the VQI rate.
EVAR: Percentage of Elective Patients with AAA Diameter Within SVS Guideline (≥5.5cm for Men; ≥5 cm for Women)

Procedures performed between June 1, 2018 and May 31, 2019

Excludes non-elective procedures. If the patient has any iliac aneurysm, the guideline is considered to have been met regardless of AAA diameter.

Data for this report include all cases with surgery date between June 1, 2018 and May 31, 2019, that had been entered into the VQI as of June 30, 2019. The table below shows the number of elective EVAR procedures in the VQI, and the percentage of those cases 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 elective EVAR procedures</td>
<td></td>
<td>498</td>
<td>5567</td>
</tr>
<tr>
<td>Percentage meeting SVS sac size guideline</td>
<td></td>
<td>76%</td>
<td>72%</td>
</tr>
</tbody>
</table>
Rate of EVAR Cases Meeting Sac Size Guideline by Year

June 2015-May 2016
June 2016-May 2017
June 2017-May 2018
June 2018-May 2019

Your Center ⊗ Your Region ⊖ VQI Overall

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of EVAR Cases Meeting Sac Size Guideline in Your Region (June 2018-May 2019)

- Other centers in your region
- Your center

Centers (centers with <10 cases not shown)

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

Rate of EVAR Cases Meeting Sac Size Guideline by Region Across VQI (June 2018-May 2019)

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:
Jens Jorgensen, MD, SVS PSO
Number of Participating Centers

- VQI Centers

Location of VQI Participating Centers

- 612 VQI Centers
- 611 centers in North America
- 1 center in Singapore
### Total Procedures Captured (as of 10/1/2019)

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peripheral Vascular Intervention</td>
<td>203,623</td>
</tr>
<tr>
<td>Carotid Endarterectomy</td>
<td>128,385</td>
</tr>
<tr>
<td>Infra-Inguinal Bypass</td>
<td>55,908</td>
</tr>
<tr>
<td>Endovascular AAA Repair</td>
<td>51,971</td>
</tr>
<tr>
<td>Hemodialysis Access</td>
<td>51,168</td>
</tr>
<tr>
<td>Carotid Artery Stent</td>
<td>34,536</td>
</tr>
<tr>
<td>Varicose Vein</td>
<td>33,748</td>
</tr>
<tr>
<td>Supra-Inguinal Bypass</td>
<td>18,564</td>
</tr>
<tr>
<td>Thoracic and Complex EVAR</td>
<td>15,891</td>
</tr>
<tr>
<td>Lower Extremity Amputations</td>
<td>15,637</td>
</tr>
<tr>
<td>IVC Filter</td>
<td>13,089</td>
</tr>
<tr>
<td>Open AAA Repair</td>
<td>12,825</td>
</tr>
</tbody>
</table>

Total procedures captured: 635,345

---

**VQI Total Procedure Volume**

Total Procedure Volume tab reflects net procedures added to the registry for the month.
Registry Updates:

- **TSP (Transcarotid surveillance project)**
  - Allows access and reimbursement
  - Significant uptick in CAS participation
  - Assessment of clinical outcomes

- **Hemodialysis Access**: In development and will be released in Q3 2019

- **Vascular Medicine Registry**: Specifications finalized, to be released in Q1 2020

- **Varicose Vein**: Specifications finalized, to be released in Q1 2020

- **Venous Stent Registry**: Released in November!
SVS PSO Staffing Update:

- Kristopher Huffman has been hired as the new Director of Analytics
  - Kristopher comes to us from ACS NSQIP and started on September 3rd
  - Dan Neal will continue on as a part-time employee of the PSO
- Caroline Morgan started in October in the new role of Clinical Operations Associate reporting to Carrie Bosela. Caroline is an RN and will be focused on support the work on registry development.
- Leka Johnson, PSO Quality Improvement Specialist, will be starting on November 11th, replacing Melissa McElroy, and based in the Chicago office.
SVS PSO Staffing Update:

- SVS PSO will be hiring an Associate Medical Director
  - A RFA will be issued by the end of August and the position will be filled by March 2020
  - Position will report to the PSO’s Medical Director, Dr. Jens Eldrup-Jorgensen
  - The initial focus will be to assist the SVS PSO Medical Director and SVS PSO staff, with guidance and oversight its clinical operations.
  - There will be a specific emphasis placed on attaining a deep understanding of the construct of the variables in each SVS VQI registry and then assisting with the development and maintenance of the registries and associated reporting and analytics.
VQI@VAM Highlights:

- **Expanded Concurrent Abstraction Sessions**
  - Consider adding Data Managers as presenters
  - Add more structured Q&A
  - Need more detailed Op Notes

- **Continued Growth of Poster/Networking Session**
  - People commented on not only the increased number of posters, but the diversity and quality of topics
  - More time allotted for QI presentations
  - Will hold QI presentations to given timeframes, going forward

- **New Topics/Presentations Received High Praise**
  - Opioid Crisis/ERAS Expert Panel
  - Limb Amputation/Preservation
  - Registry Operations Support
Attendance 161

60/40 split – Data Manager/Physician

3.24/4.00 Meeting Evaluation Rating

Who attended?

Feedback? How do we improve?
Quality Improvement Activities
Quality Improvement Webinars:

- 2019 Quarterly Webinars
  - February 2019
    - “Starting a QI project”
  - May 2019
    - “Code Rupture: Establishing A Protocol for the Patient With a Ruptured Aneurysm”
  - September 2019
    - Educational – Methodology, QI tools
    - Case studies from participants
  - November 2019
    - Wrapping up a QI project, 2020 Participation Award Information
Recap of 2018 QI Projects

Putting Data into Action
See what your colleagues are doing with QI

- Twenty five posters were presented at the 2019 VQI@VAM
- Eight charters were featured in the poster presentations
- Three charters became podium presenters
- Ten poster presenters were podium presenters
- Four posters were based on the national VQI initiatives: D/C Medications and EVAR Imaging LTFU
Quality Improvement Details for 2019 Participation Awards:

- 6-point maximum credit for QI even though additional points can be acquired
- Each VQI center submits one QI project per center for the Participation Award
- Reminder: Eligibility requirement - Participation in VQI for at least 12 months
- Final scoring completed: January 31, 2020
- Star Ratings communicated in March 2020
Scoring

- LTFU (40%)
- Regional Meeting attendance (30%)
- QI Project (20%)
- Registry subscriptions (10%)

Participation Committee is in the process of reviewing criteria for 2020 awards
3 Star Award Recipients

Maine Medical Center
3 Star Award Recipients

- Beth Israel
- Boston Medical Center
- Maine Medical Center
- Saint Francis Hospital
- UMass Memorial Health Care
- Yale New Haven Hospital
2019 Reports:

- **Quarter 1:**
  - Spring Regional Reports,
  - QI Update: EVAR LTFU Imaging Update/Risk Calculator
  - Performance Awards

- **Quarter 2:**
  - QI Initiative Updates – DC meds and EVAR LTFU imaging
  - Center and System Dashboards

- **Quarter 3:**
  - Fall Regional Reports
  - QI Initiative Updates – DC meds and EVAR LTFU imaging
  - Center and System Dashboards

- **Quarter 4:**
  - QI Initiative Updates – DC meds and EVAR LTFU imaging
LTFU Update
Jens Jorgensen MD
VSGNE – one year follow-up

November 8, 2019
VSGNNE – 2003

Goal for LTFU – 80% minimum
## Percentage of Procedures with Follow-Up within 9-21 Months

Procedures performed between July 1, 2016 and June 30, 2017

Data for this report include all cases with surgery date between July 1, 2016 and June 30, 2017, that had been entered into the VQI as of June 30, 2019. The table below shows the number of procedures in the VQI, and the percentage of those procedures with long-term follow-up.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVACCESS</td>
<td>526 (81%)</td>
<td>7666 (59%)</td>
<td></td>
</tr>
<tr>
<td>CAS</td>
<td>389 (57%)</td>
<td>4398 (62%)</td>
<td></td>
</tr>
<tr>
<td>CEA</td>
<td>1836 (69%)</td>
<td>17403 (69%)</td>
<td></td>
</tr>
<tr>
<td>EVAR</td>
<td>606 (73%)</td>
<td>6616 (71%)</td>
<td></td>
</tr>
<tr>
<td>INFRA</td>
<td>1036 (75%)</td>
<td>7327 (70%)</td>
<td></td>
</tr>
<tr>
<td>IVCF</td>
<td>NA (&lt;3 centers)</td>
<td>2240 (62%)</td>
<td></td>
</tr>
<tr>
<td>LEAMP</td>
<td>214 (60%)</td>
<td>2394 (62%)</td>
<td></td>
</tr>
<tr>
<td>OAAA</td>
<td>191 (72%)</td>
<td>1250 (68%)</td>
<td></td>
</tr>
<tr>
<td>PVI</td>
<td>3143 (74%)</td>
<td>26918 (70%)</td>
<td></td>
</tr>
<tr>
<td>SUPRA</td>
<td>317 (72%)</td>
<td>2285 (69%)</td>
<td></td>
</tr>
<tr>
<td>TEVAR</td>
<td>209 (73%)</td>
<td>2230 (62%)</td>
<td></td>
</tr>
<tr>
<td>Overall (July 2016-June 2017)</td>
<td>8481 (72%)</td>
<td>80727 (68%)</td>
<td></td>
</tr>
<tr>
<td>Overall (July 2015-June 2016)</td>
<td>8852 (70%)</td>
<td>73396 (73%)</td>
<td></td>
</tr>
</tbody>
</table>
Percentage With Long-Term Follow-Up by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Long-Term Follow-Up by Center in Your Region (July 2016-June 2017)

**Other centers in your region** | **Your center**
--- | ---
1 | **Other centers in your region** | **Your center**
2 | **Other centers in your region** | **Your center**
3 | **Other centers in your region** | **Your center**
4 | **Other centers in your region** | **Your center**
5 | **Other centers in your region** | **Your center**
6 | **Other centers in your region** | **Your center**
7 | **Other centers in your region** | **Your center**
8 | **Other centers in your region** | **Your center**
9 | **Other centers in your region** | **Your center**
10 | **Other centers in your region** | **Your center**
11 | **Other centers in your region** | **Your center**
12 | **Other centers in your region** | **Your center**
13 | **Other centers in your region** | **Your center**
14 | **Other centers in your region** | **Your center**

**Legend for LTFU by Center Graphic**

1 Central Maine Medical Center
2 University of Vermont Medical Center
3 Northern Light Eastern Maine Medical Center
4 Yale-New Haven Hospital
5 Danbury Hospital
6 U Mass Memorial
7 Concord Hospital
8 Brigham and Women’s Hospital
9 Saint Francis Hospital
10 Beth Israel Deaconess Medical Center
11 Baystate Medical Center
12 Boston Medical Center
13 Hoenig Vascular Center
14 Berkshire Medical Center
15 St. Elizabeth Medical Center
16 Maine Medical Center
17 Hartford Hospital
18 Elliot Health System
19 Tufts Medical Center
20 The Miriam Hospital
21 Rhode Island Hospital
22 Dartmouth Hitchcock Medical Center
23 Massachusetts General Hospital
24 MaineGeneral Medical Center
25 Portsmouth Regional Hospital
26 Charlton Memorial Hospital
27 Catholic Medical Center; CTSA NH
28 Lakes Region General Hospital

*** indicates center’s rate differs significantly from the regional rate.
Long-Term Follow-Up by Region Across VQI (July 2016-June 2017)

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.
Discharge Medications

Procedures performed between June 1, 2018 and May 31, 2019

Excludes patients who died in hospital and patients who were not treated for medical reason. “Antiplatelet” is defined as ASA or P2Y12 inhibitor.

Data for this report include all cases with surgery date between June 1, 2018 and May 31, 2019, that had been entered into the VQI as of June 30, 2019. The table below shows the number of procedures in the VQI, and the percentage of patients receiving discharge medications.

<table>
<thead>
<tr>
<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>Your Region Overall</td>
<td>7878</td>
<td>87%</td>
<td>8%</td>
<td>3%</td>
</tr>
<tr>
<td>VQI Overall</td>
<td>75598</td>
<td>83%</td>
<td>10%</td>
<td>4%</td>
</tr>
</tbody>
</table>
Percentage Receiving Discharge Antiplatelet+Statin by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
EVAR: Rate of Sac Diameter Reporting at Long-Term Follow-Up

Procedures performed between July 1, 2016 and June 30, 2017
Excludes patients who died within 21 months of surgery.

Data for this report include all cases with surgery date between July 1, 2016 and June 30, 2017, that had been entered into the VQI as of June 30, 2019. The table below shows the number of EVAR procedures in the VQI, and the percentage of those cases in which the patient had a follow-up visit between 9 and 21 months post-surgery at which a sac diameter was recorded.

<table>
<thead>
<tr>
<th></th>
<th>Your Center</th>
<th>Your Region</th>
<th>VQI Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of EVAR procedures</td>
<td></td>
<td>573</td>
<td>6150</td>
</tr>
<tr>
<td>Percentage with sac diameter</td>
<td></td>
<td>62%</td>
<td>57%</td>
</tr>
<tr>
<td>recorded at follow-up</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Rate of LTFU Sac Diameter Reporting by Year

Regional data are not shown for the region with <3 centers with at least 10 cases.
Rate of LTFU Sac Diameter Reporting in Your Region (July 2016-June 2017)

- Other centers in your region
- Your center

Centers (centers with <10 cases not shown)

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

Rate of LTFU Sac Diameter Reporting by Region Across VQI (July 2016-June 2017)

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

** indicates region’s rate differs significantly from the VQI rate.
VSGNE – 2019

How do we do better?
Research Advisory Council
Phil Goodney, MD
Change in RAC Policies!

- Policy on RAC Requests Related to Industry Studies
- Policy on Device Identification for approved RAC Requests
- Conflict of Interest Policies Revised based on these new Policies
- All posted on the VQI Web Site
## Proposal Submissions

### December 2019
- **Call for Proposals:** October 15, 2019
- **Due Date:** November 18, 2019
- **Meeting:** December 9, 2019
- **Notification Sent:** December 10, 2019

### February 2020
- **Call for Proposals:** December 10, 2019
- **Due Date:** January 20, 2020
- **Meeting:** February 10, 2020
- **Notification Sent:** February 11, 2020
No Restriction of data release based on similar projects; collaboration is encouraged

Only 1 refresh of data within 24 months of initial approval

Industry related projects need to collaborate with the steering committee/s (i.e. TCAR)
  – Review policy and industry charters on the web

Device Identification Policy: review on the web before submitting proposal
EC has approved the creation of a Venous RAC for 2020, to be chaired by Dr. Nick Osborne

Provide more focus for venous procedures

Reduce workload for National RAC, which will become the Arterial RAC

Support research and analysis for the new Venous Stent registry

Regions to appoint regional Venous RAC Chairs
Check Approved Project List

https://www.vqi.org/data-analysis/rac-approved-project-search/

To submit a proposal to be considered for the National RAC, please follow the link below: http://abstracts123.com/svs1/meetinglogin
VSGNE Quality Improvement Projects
Philip Goodney, MD
Moderator
VSGNE Quality Improvement Projects

Nathan Aranson, MD and Brian Nolan, MD

Improving Care for Patients Undergoing Transcarotid Artery Revascularization Using a Novel Preoperative Risk Assessment Tool
VSGNE Quality Improvement Projects
Douglas Jones, MD
Reducing Postoperative Hospital Utilization through Improved Discharge Planning After Lower Extremity Revascularization
VSGNE Quality Improvement Projects
Tanner Kim, MD
A pilot study of a comprehensive multidisciplinary inpatient-based approach to smoking cessation for patients with vascular disease
VSGNE Quality Improvement Projects
Aaron Barnes, MD
Anticoagulation and Antiplatelet Treatment Plan
Communication and Documentation Improvement Project
New QIP Proposals
Mead Ferris, MD
A proposal for VSGNE:
Rivaroxaban for Secondary Prevention in High Risk PAD
New QIP Proposals:
Call for Proposals
Phil Goodney, MD
Lunch
12:00pm to 12:45pm
Arterial Quality Council: Jessica Simons, MD
Opioid Workgroup is formed and charged with putting forth recommendations on how the VQI can be used to track, monitor and benchmark opioid utilization.

Continued refinement to Global Unique Device Identification Database (GUDID) integration in PVI, with planned expansion to other registries.

Initiating Future Registry Updates
- Harmonizing Demographics and Meds across all registries
- Updating Infra/Supra Registries
- Updating OAAA

Provided Education and Clarification on recording “Other Devices” and IDEs
Venous Quality Council: Phil Goodney, MD
Council and Committee Transition
– Dr. Almeida is in his last year as Chair of VQC
– Succession needed for VV Registry committee chair

Potential for Formation of a separate RAC for Venous

Continued Interest from United Healthcare on collaborating on Appropriateness for Ablations. Could eliminate the need for pre-authorizations.
Governing Council:
Phillip Goodney, MD
Vote on new Executive Committee Member
   – Dr. Yazan Duwayri, Emory University

Presentation on Potential New Cost Project – Expanding upon the EVAR Cost Pilot Project

Need for New RAC Policies
   – Revised Data Use Agreements
   – Non-VQI members cannot have access to VQI BDS
   – How to handle center id in Regional Data Sets
Data Managers’ Update
Patricia Bozeman, RN
RAPID/SPEED Update
Daniel Bertges, MD and
Jens Jorgensen, MD
A RAPID Update: SPEED OPGs and Pathways

Jens Eldrup-Jorgensen, MD
and
Daniel J Bertges, MD
Associate Professor of Surgery and Medicine
Vascular Surgery Fellowship Program Director
University of Vermont Medical Center
Division of Vascular Surgery
VQI PVI Registry Chair
Co-Chair RAPID
RAPID

Registry Assessment of Peripheral Interventional Devices

Using registries to evaluate and monitor endovascular devices
RAPID

P3 - Public Private Partnership

- Professional Societies (ACC, SVS, SIR)
- Governmental Agencies (FDA, CMS, Library of Medicine)
- Industry (Bard, Cook, Boston Scientific, WL Gore, Medtronic)
- Payers – Private
- EMR’s
- Other stakeholders
RAPID

Infrastructure - Registry based system

• Assess device performance
• Monitor safety and efficacy
FDA/VQI

- Pre market approval
- Expansion of indications
- Post approval surveillance
- Long term monitoring of safety and efficacy - TPLC
RAPID
Phase 1

- Develop core data elements and definitions (ACC NCDR and SVS VQI)
- Create unique device identifiers
Global Unique Device Identification Database (GUDID)

- FDA administered database – reference catalog for all medical devices
- VQI has incorporated GUDID into registry forms
RAPID
Phase 2

• Incorporate CDE into Registry

• Create Objective Performance Criteria for treatment of infrainguinal PVI
SPEED
Superficial Popliteal Evidence Development

• Registry based analysis of device performance in the SFA and popliteal artery
• OPC’s for treatment of SFA/popliteal artery
Why SFA-Popliteal EvidencE Development (SPEED)?

- Previous OPG’s > 10 years old
- Femoral-popliteal PVI mature but evolving device space
- Devices often used off-label for patients and anatomies not tested in clinical trials
- Current objective performance goals based on limited populations and are obsolete
- Difficult for physicians and patients to chose wisely
SPEED OPGs

- VQI PVI registry used to establish Objective Performance Goals (OPG) for percutaneous SFA-popliteal interventions for claudication and chronic limb threatening ischemia from 2010-2016

- Three OPGs:
  1. **Mortality:** 1 and 4 years
  2. **Major amputation:** below or above knee amputation of index limb
  3. **Target lesion revascularization (TLR):** repeat intervention (open surgical or percutaneous) on the index artery
SPEED OPGs

- OPGs stratified by artery: SFA versus popliteal

- OPGs stratified by treatment
  1. Plain balloon angioplasty
  2. Self-expanding stent
  3. Atherectomy
  4. “Practice of medicine” = all treatments combined
SFA-Popliteal EvidencE Development (SPEED)

- OPGs serve as framework for design of prospective device trials nested in a coordinated registry network
  1. Set appropriate comparators
  2. Benchmarks

- Expected clinical utility for comparative effectiveness of devices
VQI PVI Registry
2010-October 2016
N= 96,339 procedures

Excluded N= 57,995 procedures
PVI not femoral-popliteal  N= 38,398
Treatment not meeting inclusion  N= 4,632
Acute ischemia  N= 5,404
Femoral popliteal aneurysm  N= 3,075
Concomitant femoral TEA  N= 2,837
Ipsilateral CFA/PFA PVI  N= 2,451
Concomitant open procedure  N= 708
Emergent procedure  N= 295
Missing data on procedure side  N= 195

Without long term follow-up N=14,706

Procedures with long-term follow-up
N= 32,845

Excluded for missing key covariates or outcome of interest
TLR  N= 14,725
Major amputation  N= 6,691
Mortality  N= 7,681

Objective
Performance Goals

TLR
N= 17,856 procedures
All Treatments  N = 17,856
PTA  N = 6,486
Self-expanding stent  N = 7,235
Atherectomy  N = 1,979

Major amputation
N= 14,936 procedures
All Treatments  N= 14,936
PTA  N = 4,800
Self-expanding stent  N = 6,059
Atherectomy  N = 1,456

Mortality
N= 21,377 procedures
All Treatments  N= 21,377
PTA  N = 7,505
Self-expanding stent  N = 9,217
Atherectomy  N = 2,510
Analytical Team works interactively with the RAPID Stat Focus Group (Lead: Roseann White, PhD)
## SPEED OPGs

<table>
<thead>
<tr>
<th>Objective Performance Goal</th>
<th>Superficial femoral artery (%)</th>
<th>Popliteal artery (%)</th>
<th>Any Treatment*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PTA</td>
<td>Stent</td>
<td>Ather</td>
</tr>
<tr>
<td>Claudication</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freedom from TLR, 1-yr</td>
<td>84</td>
<td>86</td>
<td>87</td>
</tr>
<tr>
<td>Freedom from amputation, 1-yr</td>
<td>99</td>
<td>99</td>
<td>99</td>
</tr>
<tr>
<td>Survival, 1-yr</td>
<td>97</td>
<td>97</td>
<td>97</td>
</tr>
<tr>
<td>Survival, 4-yr</td>
<td>89</td>
<td>89</td>
<td>88</td>
</tr>
<tr>
<td>CLI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freedom from TLR, 1-yr</td>
<td>77</td>
<td>79</td>
<td>78</td>
</tr>
<tr>
<td>Freedom from amputation, 1-yr</td>
<td>87</td>
<td>90</td>
<td>87</td>
</tr>
<tr>
<td>Survival, 1-yr</td>
<td>83</td>
<td>85</td>
<td>89</td>
</tr>
<tr>
<td>Survival, 4-yr</td>
<td>66</td>
<td>71</td>
<td>74</td>
</tr>
<tr>
<td>All patients</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freedom from TLR, 1-yr</td>
<td>80</td>
<td>83</td>
<td>84</td>
</tr>
<tr>
<td>Freedom from amputation, 1-yr</td>
<td>93</td>
<td>96</td>
<td>95</td>
</tr>
<tr>
<td>Survival, 1-yr</td>
<td>89</td>
<td>91</td>
<td>93</td>
</tr>
<tr>
<td>Survival, 4-yr</td>
<td>76</td>
<td>80</td>
<td>82</td>
</tr>
</tbody>
</table>

VSGNE use only, not for distribution
SPEED - OPGs based on >20,000 procedures: TLR

Superficial Femoral Artery Freedom from Target Lesion Revascularization

K-M estimate at 1 year:
- PTA = 80.3%
- Stent = 83.2%
- Atherectomy = 83.9%
- Overall = 81.9%
SPEED OPGs for SFA-popliteal intervention

- SPEED OPGs one step toward practical use of RWE
- Proposals intended for regulatory approval discussed with the FDA to refine the OPG to match the specific trial population
- Potential for creating “dynamic OPGs” to keep pace with evolving technology
RAPID Phase 3
Goal: to further the national evaluation system for PAD device evaluation throughout the TPLC using lessons learned from the paclitaxel experience

Future work should be applicable for all PAD devices and not specific to PTX or other drug-device technology
5 RAPID Pathway work groups

1. **LEAN CRF for Peripheral Studies Working Group**
   **Deliverable:** develop a consensus, harmonized CRF for randomized controlled trials or coordinated registry network studies of PAD devices using the RAPID PAD specific core data elements as a foundation, updated with reference to more recently reported studies.

2. **SMART CRF for Peripheral Studies Working Group**
   **Deliverable:** through information science develop a forward thinking CRF leveraging multiple real world data sources including EHRs in communication with the Lean CRF work group.

   **Deliverable:** Develop strategies to incorporate patient preference, consent and PRO into PAD device evaluation through clinical trials and CRNs.

4. **Signal Discernment Analytics & Biostatistics Working Group**
   **Deliverable:** Develop a consensus for best statistical practices for PAD device evaluation including analysis of late outcomes using lessons learned from the PTX signal detection and discernment experience.

5. **Independent PTX Projects Working Group**
   **Deliverable:** Share cohort profiles, data structure and quality, analytic plans and results of independently conducted studies of PTX, creating both opportunities for collaborations and a summary of lessons learned from each project.
Volunteers to date

- Jessica Simons
- Nick Caruthers
- Bob Steppacher
- Michel Stoner
- Dan Clair
- Michael Conte
- Jens Jorgensen
- Carrie Bosela

- You
Paclitaxel Working Group Update
Jens Jorgensen, MD, and
Daniel Bertges, MD
Paclitaxel Working Group Update

VISION VQI Paclitaxel Safety Analysis
DELTA VQI Paclitaxel Surveillance

Daniel Bertges, MD
Katsanos – Meta-analysis of RCT paclitaxel-coated balloons and stents in the femoropopliteal artery

- All-cause mortality increased at 2 years
  (7.2% vs 3.8%, risk ratio 1.68)
  number –needed-to-harm, 29 patients

- All-cause mortality increased at 5 years
  (14.7% vs 8.1%, risk ratio 1.93)
  number –needed-to-harm, 14 patients
Katsanos – response

- FDA

- UPDATE: Treatment of Peripheral Arterial Disease with Paclitaxel-Coated Balloons and Paclitaxel-Eluting Stents Potentially Associated with Increased Mortality - Letter to Health Care Providers
Katsanos – International response

- SwedePAD – stopped enrollment of Paclitaxel, subsequently reinstated
- BASIL-3 – stopped enrollment, subsequently reinstated
- UK MHRA – Do not use for claudicatio
- Individualize for CLI
Katsanos – response

- JAMA Cardiology – Secemsky et al. CMS 16000 pts 600 days. No increased mortality

- JACC – Schneider et al. Industry trials 1800 pts up to 5 years. Paclitaxel safe and effective
Katsanos – response

- FDA Advisories
- VIVA analysis
- Society Coalition – KR
- Industry coalition
- SVS – PSTF
The SVS Paclitaxel Safety Task Force

- Kim J Hodgson, MD  PSTF Chair & SVS President
- Jens Eldrup-Jorgensen, MD  SVS-PSO Medical Director
- Larry Kraiss, MD  Chair, SVS Quality Council
- Daniel Bertges, MD  Chair, SVS-PSO PVI Registry
- Michael Conte, MD  Co-Editor, Global Vascular Guidelines
- Alik Farber, MD  Co-PI; BEST CLI Trial
- Fred Weaver, MD  Chair, SVS PSO
- Thomas Forbes, MD  SVS Document Oversight Committee
Data Granularity in the SVS-VQI

- **SVS-VQI** uses the FDA’s **GUDID** system (Global Unique Device Identification) for accurate device-specific data entry.

- **GUDID** allows **device specific linkage** to CMS, FDA, SSDI and other databases.
FDA panel – mid June

- ACC, VIVA, etc
- Industry
- SVS
Analyze the PTX safety signal

- Introduce active risk-adjusted propensity matched surveillance of mortality
- Retrospective analysis using VQI matched to CMS claims
VISION and VQI Paclitaxel Safety Analysis

Steering Committee
Daniel Bertges MD, Jens Jorgensen MD, Philip Goodney MD MS, Art Sedrakyan MD PhD, Danica Marinac-Dabic MD PhD, Misti Malone PhD, Roseanne White PhD, Aaron E. Lottes PhD MBA, Josh Smale, Melissa Young, Jennifer Hansen
VISION VQI PTX SAP

1. Assess **safety** of paclitaxel coated devices by analysis of the VQI PVI linked to Medicare claims 2012 - 2016

2. To analyze factors associated with mortality. Specifically comparing paclitaxel patients surviving vs. paclitaxel patients with mortality. The goal is to identify independent factors predictive of mortality in US pivotal trials and model registry data exposures with sufficient factors to track competing risk paradox, and show emulation or not of mortality outcomes with both PTX and PTA exposures.

3. To confirm the **effectiveness** of paclitaxel devices by comparing reintervention for paclitaxel and non-paclitaxel devices.
   - Major amputation in patients with CLTI
   - Target vessel revascularization (TVR)
Primary Endpoint:  
1. Freedom from death from any cause at 2 and 5 years

Secondary Endpoints:  
1. Target vessel revascularization (TVR)  
2. Major amputation  
3. Mortality associated TVR
Three principle analyses:

a) Paclitaxel DCB (including the Bard Lutonix, Medtronic In.Pact Admiral) compared with propensity matched patients treated with plain balloons.

b) Paclitaxel delivering DES (Cook Zilver PTX) compared with propensity matched cases using bare metal stents (BMS).

c) Patients treated with either Paclitaxel DCB or Paclitaxel DES compared with propensity matched controls (with DCB patients matched to patients treated with plain balloons, and DES patients matched to patients treated with BMS).
Prospective real-time tracking

- Data Extraction and Longitudinal Trend Analysis (DELTA)

- Open Source Software Application for ongoing active surveillance of safety signal - risk adjusted tracking of mortality within VQI

- In collaboration with Dr. Fred Resnic and the Lahey Clinic
Two part approach

1. Apply the DELTA propensity match retroactively
   - Would the VQI have detected the signal if DELTA was in place?

2. Embed the DELTA software in the registry on ongoing surveillance
A: Paclitaxel DCB Analysis

PAD Endovasc Cases (1/17 – 8/19)  
\[ n = xxxxx \]

Analysis Cohort  
\[ n = xxxxx \]

- Exclude:
  - Non Fem-Pop site:  \[ n = xxxxx \]
  - Any stent used:  \[ n = xxxxx \]
  - Age <18 years:  \[ n = xxxxx \]

DCB Treated  
\[ n = xxxxx \]

Standard Balloon Treated  
\[ n = xxxxx \]

DCB Matched  
\[ n = xxxxx \]

Standard Balloon Matched  
\[ n = xxxxx \]

Primary Analysis Cohort
B: Paclitaxel DES Analysis

PAD Endovasc Cases (1/17 – 8/19)
  n = xxxxx

- Exclude:
  - Non Fem-pop site:  n = xxxxx
  - No SE stent used:  n = xxxxx
  - Any BE stent used:  n = xxxxx
  - Age <18 years:  n = xxxxx

Analysis Cohort
  n = xxxxx

Paclitaxel DES Treated
  n = xxxxx

Bare Metal Stent Treated
  n = xxxxx

Paclitaxel DES Matched
  n = xxxxx

Bare Metal Stent Matched
  n = xxxxx

Primary Analysis Cohort
C: Any Paclitaxel Device Analysis

From A: Paclitaxel DCB Analysis

- Paclitaxel DCB Matched
  n = xxxxx

- Plain Balloon Matched
  n = xxxxx

From B: Paclitaxel DES Analysis

- Paclitaxel DES Matched
  n = xxxxx

- Bare Metal Stent Matched
  n = xxxxx

Any Paclitaxel Device Matched
n = xxxxx

Non Paclitaxel Device Matched
n = xxxxx

Primary Analysis Cohort
VQI DELTA

- First application of device surveillance in our registry

- Test case for utility of a strategic, proactive device surveillance system

- Other high value applications
  1. AFX endoleak
  2. BK DCB devices
  3. Future Limus platforms for SFA-pop
  4. Others?
Carotid Complexities: TCAR, Transfemoral, CEA – When, Why, and Where?
The Panel:

- Brian Nolan, MD, Maine Medical Center: 100 TCARs and counting
- Philip Goodney, MD, Dartmouth: Transfemoral when TCAR is not an option
- Jessica Simons, MD, UMass: CEA still the right answer in this setting
VSGNE RAC Update
Jeff Siracuse, MD
(Moderator)
VSGNE RAC Projects

C Chaar, MD, Yale:
Vascular Access Patency after Revision Procedures for Steal Syndrome

Outcomes of lower extremity revascularization among nonagenarians and centenarians

Characteristics and outcomes of patients with premature PAD undergoing lower extremity revascularization
VSGNE RAC Projects
L de Guerre, MD, BIDMC:
Trends for perioperative and long-term outcomes and reinterventions after FEVAR

Trends for perioperative and long-term outcomes and reinterventions after TEVAR
VSGNE RAC Projects
J Lu, MD, BIDMC:
Effect of time from symptoms on perioperative outcomes following carotid endarterectomy in formerly symptomatic patients
VSGNE RAC Projects

P Patel, MD, BIDMC:

Urgent or emergent aortic repair with prior abdominal aortic aneurysm diagnosis
VSGNE RAC Projects

S Levin, MD, BMC:
Outcomes of Tibial Interventions for Claudication

Effect of State Tobacco Tax on Prevalence of Perioperative Current Smoking in Patients Undergoing Intervention for Peripheral Arterial Disease
Meeting Evaluation:

- What did you like about this meeting?
- What can we do better?
- Next meeting location: ???