

# Rocky Mountain Vascular Quality Initiative

March 18, 2022

11:00 AM – 3:00 PM MT

Hybrid

# Meeting Attendance Credit

**Before we get started,  
please sign in.**

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



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

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

**Sign in with your Full name, MD, Name of Institution**

- Scott Berman, MD - Regional Medical Director
- Tze-Woei Tan, MD - Regional Associate Medical Director
- Megon Berman - Regional Lead Data Manager
- Jens Jorgensen, MD - SVS PSO Medical Director
- Kristopher Huffman - Director Analytics & Analytic Team
- Leka Johnson - Quality Improvement Specialist
- Betsy Wymer - SVS PSO Director of Quality
- SVS PSO Staff

- Please routinely review your Center Characteristics for accuracy
- For those who have left your facility, please change their status to inactive and maintain current email addresses

**Admin**  
Admin > Center Characteristics

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**Medical Center Name & Address**

Medical Center Name

Initials

Country

Address 1

Address 2

City

State/Province

Zip/Postal Code

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**Medical Center Details**

Tax ID Number (TIN)  ☐ N/A

AHA Number  ☐ N/A

Medicare Hospital ID  ☐ N/A

Type of Contracting Entity

Ownership Status

Size of Metropolitan Area

Electronic Medical Record System

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**Medical Center Contacts**

Lead Hospital Manager  Email Address:  Phone Number

Lead Physician  Email Address:  Phone Number

	First Name	Last Name	Phone Number	Email Address
Quality Officer	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Financial Officer	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Department Chair	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

# Agenda – March 18, 2022

Time	Topic	CE Credit
11:00 am	Welcome	No
11:05am	<p>Regional Data Review – Scott Berman, MD, (Region) Medical Director</p> <p>Learning Objectives:</p> <ul style="list-style-type: none"><li>• Use the VQI regional reports to establish quality improvement goals for the vascular patients (outcomes) and for their center (process).</li><li>• Interpret and compare each centers' VQI results to regional and national benchmarked data.</li><li>• Learn, through group discussion the VQI regional results to improve the quality of vascular health care by monitoring measurable performance indicators, SVS PSO evidence-based research, and outcomes.</li><li>• Identify high performing regional vascular centers to discuss variations in care and clinical practice patterns to improve outcomes and prompt quality improvement recommendations for vascular care patients. Sharing of best practices/pathways of care.</li></ul>	Yes
12:05pm	<p>Regional QI Proposal – Scott Berman, MD, (Region) Medical Director</p> <p>Learning Objectives:</p> <ul style="list-style-type: none"><li>• Use the VQI regional reports to establish quality improvement goals for the vascular patients (outcomes) and for their center (process).</li><li>• Interpret and compare each centers' VQI results to regional and national benchmarked data.</li><li>• Learn, through group discussion the VQI regional results to improve the quality of vascular health care by monitoring measurable performance indicators, SVS PSO evidence-based research, and outcomes.</li><li>• Identify high performing regional vascular centers to discuss variations in care and clinical practice patterns to improve outcomes and prompt quality improvement recommendations for vascular care patients. Sharing of best practices/pathways of care.</li></ul>	Yes

# Agenda (cont.)

Time	Topic	CE Credit
12:35pm	National VQI Update – PSO Staff Member Name and Title Learning Objectives: <ul style="list-style-type: none"><li>• Use the VQI regional reports to establish quality improvement goals for the vascular patients (outcomes) and for their center (process).</li><li>• Identify high performing regional vascular centers to discuss variations in care and clinical practice patterns to improve outcomes and prompt quality improvement recommendations for vascular care patients.</li></ul> Sharing of best practices/pathways of care.	Yes
1:05pm	AQC Update – Benjamin Brooke, MD	No
1:10pm	VQC Update – Brigitte K Smith, MD	No
1:15pm	RAC Update – Benjamin Brooke, MD	No
1:20pm	Governing Council Update – Scott Berman, MD	No
1:25pm	Case Presentations	No
1:30pm	Open Discussion/Next Meeting/Meeting Evaluation	No

**No presenter has a disclosure or conflict of interest to report.**

# Welcome and Introductions

Abrazo Arrowhead Campus  
Arizona Endovascular Center  
Arizona Vascular Specialists, LLC  
Banner Desert Medical Center  
Banner Heart Hospital  
Banner-University Medical Center  
Phoenix  
Banner-University Medical Center Tucson  
**Banner Del E. Web Medical Center**  
Carson Tahoe Regional Hospital  
Chandler Regional Medical Center  
Flagstaff Medical Center  
HonorHealth Deer Valley Medical Center  
HonorHealth Scottsdale Osborn Medical Center  
HonorHealth Scottsdale Thompson Peak Medical Center  
Intermountain Medical Center  
Kootenai Health  
Lovelace Medical Center  
Lutheran Medical Center

Mayo Clinic Arizona  
McKay-Dee Hospital  
Memorial Hospital Central  
Memorial Hospital of Laramie County  
d/b/a Cheyenne Regional Medical Center  
Parkview Medical Center  
Pima Vascular  
Porter Adventist Hospital  
Presbyterian Hospital  
Presbyterian/St. Luke's Medical Center  
Rose Medical Center  
Saint Alphonsus Regional Medical Center  
Saint Joseph Hospital  
St. Anthony Lakewood  
St. George Regional Hospital  
St. Joseph's Hospital and Medical Center  
St. Luke's Health System, Ltd.  
St. Mary Corwin Medical Center  
St. Mary's Hospital  
**Saint Mary's Regional Medical Center**

St. Vincent Healthcare  
Superior Vein Care, PLLP  
The Medical Center of Aurora  
Tucson Medical Center  
University of Arizona Medical Center  
University of Colorado, Denver  
University of Colorado, North Vascular Services  
University of New Mexico  
University of Utah Hospital and Clinics  
Utah Valley Hospital  
Verde Valley Medical Center  
VHS of Arrowhead, Inc. d/b/a Abrazo  
Arizona Heart Hospital  
VVAS - Varicose Vein and Aesthetic Solutions  
Yavapai Regional Medical Center  
Yuma Regional Medical Center

# Dr. Caronae Howell, MD

The University of Arizona  
University of Utah Hospital and Clinics

# Introduction to The Vascular Quality Initiative Quality Fellowship-in- Training Program (VQI Quality-FIT)



# Overview

VQI Quality-FIT Basics  
Program Leadership  
Current Trainees + Mentors  
Program Goals  
Program Themes  
Quality-FIT Roadmap and Timeline  
Milestones  
My Project

1





## VQI Quality-FIT Basics

- 12-18 month pilot program for trainees (Vascular surgery, General surgery, Interventional cardiology, Vascular medicine)
- Designed as an intro to outcomes/quality research using Patient Safety Organization (PSO) data and resources
- Trainees matched with mentor based on project/interests





# Program Leadership

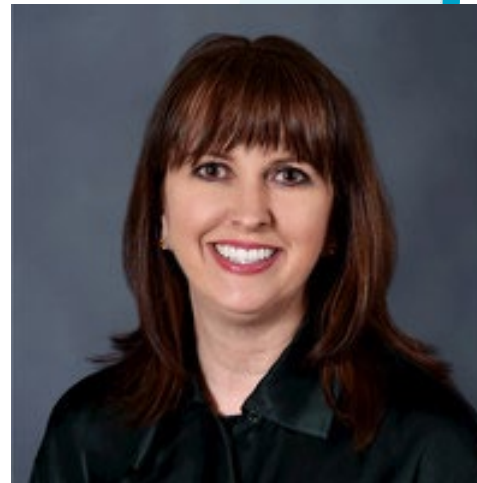
Dr. Gary Lemmon,  
MD (Program  
Director)



Dr. Brigitte Smith, MD  
(Program Director)



Betsy Wymer, RN,  
MSN, DNP (Program  
Coordinator/VQI  
Director of Quality)



# Trainees and Mentors



<b>FIT Mentors</b>	<b>FIT Trainees</b>	<b>Centers</b>
Sarah Deery	Aarathi Minisandram	Maine Medical Center
Graham Roche-Nagle	Ben Li	Toronto General Hospital
Sarah Zettervall	Blake Murphy	University of Washington Medical Center
Phil Goodney	Brianna Krafcik	Dartmouth Hitchcock Medical Center
Benjamin Brooke	Caronae Howell	The University of Arizona/University of Utah Hospital and Clinics
Shihuan K Wang	Channa Blakely	UTMB Health/Memorial Hermann Texas Medical Center
Danny Bertges	Christine Kariya	University of Vermont Medical Center
Adam Beck	Claire Motyl	University of Alabama Medical Center
Michael Murphy	Hanaa Dakour Aridi	IU Health – Methodist
Edward Gifford	Laura Healy	Hartford Hospital University of Connecticut
Eleftherios Xenos	Lauren Grimsley	UK Healthcare
Kyla Bennett	Leah Gober	University of Wisconsin Hospitals and Clinics Authority
Karan Garg	Rae Rokosh	NYU Langone Health
Beau Hawkins	Razan Elsayed	OU Medical Center
Mitchell Cox	Roberto Loanzon	Duke University Health System
Nikoloas Zacharias	Srihari Kumar Lella	Massachusetts General Hospital



# Program Goals

“Fostering an understanding of quality processes and metrics among vascular residents and fellows (‘trainees’) through mentorship in the VQI, in collaboration with the Association of Program Directors in Vascular Surgery (APDVS), American College of Cardiology, and Society for Vascular Medicine.”





## Program Themes

- Use registry data from trainee/mentor center
- Flexible structure
  - QA/QI education, methodology and stats instruction, regional/national meetings
- Key milestones
  - Biannual mentorship meetings



# FIT Roadmap

Application Process:  
personal statement  
career interest/goal,  
project area, 2 LOR  
and letter of good  
standing from PD

1

Mentor matching:  
discuss goals,  
project ideas, career

3

Committee  
review/selection

2

Initial meetings with  
mentor and project  
selection ->  
milestone meetings

4

Submission to  
Research Advisory  
Committee –and  
local IRB ->  
refinement as  
needed

5

Data analysis and  
project write-up ->  
Publication and  
presentation

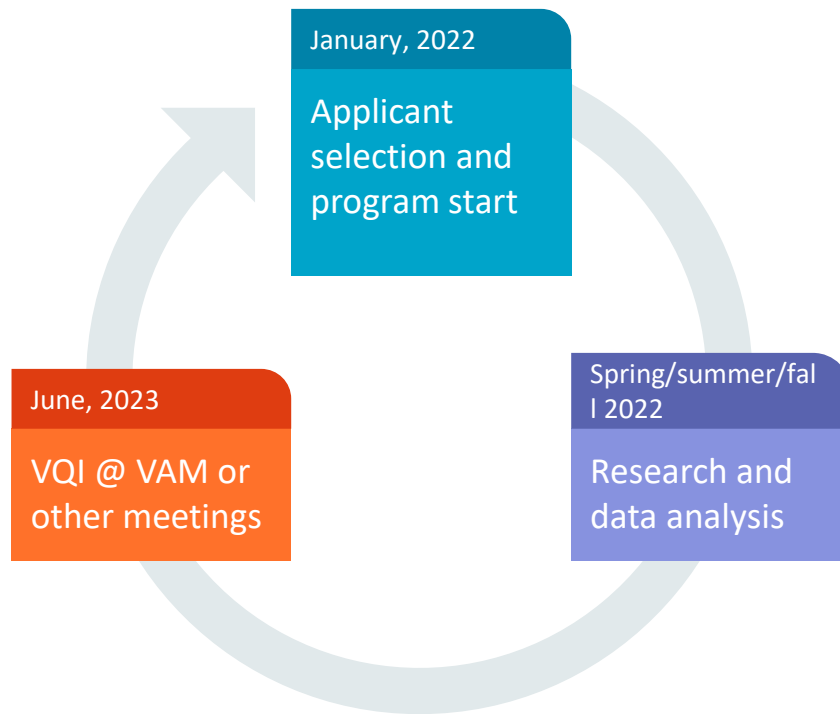
6

VQI @  
VAM/awards  
selection  
including Jack  
Croenenwett  
MD scholarship

7



# FIT Timeline





# Milestones: QI

Quality Improvement Checklist				
Level 1	Level 2	Level 3	Level 4	Level 5
<u>Introduction</u>  VQI-Web Portal info (members only login) Mentor led review of variables/definitions LTFU parameters and mandatory fields Local Data Manager introduction	<u>Acquire Knowledge</u>  Review of local data/QI with Mentor and DM Knowledge of Quality Charter build Regional meeting prep call (ad hoc)	<u>Familiarity with VQI</u>  Existing Quality Charters and QI projects (website)  Participate in Quality Charter build at local/regional level	<u>Participates</u>  Demonstrate skills for use of Registry data to develop QI project Initiate Quality Charter or QI project Publication with VQI data (minor role)	<u>Leads</u>  National QI at center/regional level Presents QI/QC at regional/national meeting Publication with VQI data (major role)



# Milestones: Patient Safety

Patient Safety Checklist				
Level 1	Level 2	Level 3	Level 4	Level 5
<u>Introduction</u>  PSO Organizational Chart Pathways website and Analytic Engine Reports Audible bleeding: RAC introduction	<u>Acquire Knowledge</u>  Interpret Registry reports for Quality Improvement Review existing RAC projects GC meeting attendance (ad hoc) Attend Regional Study Group	<u>Familiarity with PSO</u>  Present comparative data at Regional Study Group SQUIRE 2.0 guidelines and RAC requirements for research RAC journal club	<u>Participates</u>  Regional Project for Venous or Arterial RAC-new Join existing RAC project-analysis	<u>Leads</u>  Abstract submission for VQI@VAM Podium presentation of RAC research RAC research publication (major role)



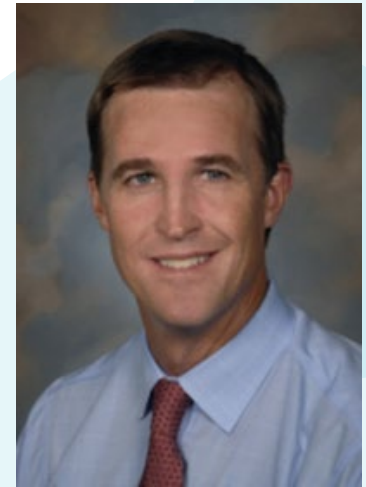
# My Project

**Mentor:** Dr. Benjamin Brooke, MD (University of Utah)

**Areas of interest:** Limb salvage in racial/ethnic minorities, microvascular disease, run-off patterns, disparities in access to care

**Title:** Patterns of Diseased-vessel Distribution in Racial/Ethnic Minorities with CLTI (preliminary)

**Registries:** Peripheral Vascular Intervention (PVI), Lower Extremity Amputation (LEAMP), Infra-inguinal bypass (INFRA)





# THANKS!

## Any questions?

You can find me at:

- Caronae.howell@bannerhealth.com



## Current Quality Improvement Charters

- Relationship Between Pre-operative Frailty Assessment and long-term outcomes following vascular surgery
  - University of Utah; Julie Beckstrom
- Documentation - LOS CEA and EVAR
  - Pima Vascular; Megon Berman
- PRO & ABI
  - Pima Vascular; Megon Berman












# #Frailty – PI: Larry Kraiss, MD, FACS

Using the **Clinical Frailty Scale**, assess the relationship between pre-operative frailty assessment and long-term outcomes following vascular surgery.

## Feb 2022 Hashtag Pull:

- 1,665 Procedure
- 675 LTF
- 336 Paired Procedure & LTF

**Clinical Frailty Scale**

 <p><b>1 Very Fit</b> – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.</p>	 <p><b>7 Severely Frail</b> – Completely dependent for personal care, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).</p>
 <p><b>2 Well</b> – People who have no active disease symptoms but are less fit than category 1. Often, they exercise or are very active occasionally, e.g. seasonally.</p>	 <p><b>8 Very Severely Frail</b> – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.</p>
 <p><b>3 Managing Well</b> – People whose medical problems are well controlled, but are not regularly active beyond routine walking.</p>	 <p><b>9 Terminally Ill</b> – Approaching the end of life. This category applies to people with a life expectancy &lt;6 months, who are not otherwise evidently frail.</p>
 <p><b>4 Vulnerable</b> – While not dependent on others for daily help, often symptoms limit activities. A common complaint is being "slowed up", and/or being tired during the day.</p>	
 <p><b>5 Mildly Frail</b> – These people often have more evident slowing, and need help in high order IADLs (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.</p>	
 <p><b>6 Moderately Frail</b> – People need help with all outside activities and with keeping house. Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.</p>	

**Scoring frailty in people with dementia**  
The degree of frailty corresponds to the degree of

**4 Participating Rocky Mountain Region Center:**

- University of Utah
- St. Vincent Healthcare
- PIMA Heart & Vascular
- University of Arizona

# Pima Heart & Vascular QOL PRO Project Update

- Cases Where intervention performed for claudication only, NO CLI.
- VascuQOL 6 used preop, short term postop (up to 3 months) & 1 year postop
- Short term postop ABI collection

Date Range 10/1/2019-12/31/2021		
Eligible Cases	451	100%
Male	283	63%
Female	168	37%
OP	90	20%
IP	57	13%
OBL	304	67%
Fall outs (repeat ipsilateral intervention during FU period)	87	19%

## Pima Heart & Vascular QOL PRO Project Update

Of Remaining 343(not including fallouts)		
Preop score documented	97	28%
Early postop score documented	62	18%
1 yr postop score documented	24	7%
Early postop ABI documented	160	47%

## Pima Heart & Vascular QOL PRO Project Update

### **Preop ABI Collection Rate Before & After Implementation of QI Project**

2019	52%
2020-2021	73%

# Pima Heart & Vascular LOS Hashtag Project Update

- Began June 1, 2021
- Captures EVAR postop LOS>2d and CEA postop LOS >1d with complications listed as “none” due to lack of appropriate option on current postop form.
- **#[LOS:REL]**
- **#[LOS:CLIN]**
- **#[LOS:NONCLIN]**

	LOS over expected value	Total non-ruptured EVAR/asx CEA	%	Reason for extended stay
CEA	2	40	5%	1 Clinical Related (chest pain, spontaneously resolved w/o any associated dx); 1 Clinical Non Related (c-diff & UTI)
EVAR	3	39	8%	2 Clinical Related (urinary retention & postop hypotension); 1 Clinical Non-related (stayed for dialysis/ESRD pt)

## Scott Berman, MD

### VQI Regional Quality Report

Spring 2022



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

#### About the Report

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

*For drill-down and data feedback on your center's cases, click on "VQI Case Appendix" in the table of contents on the left.*

## Important Notes

- All results are based on data entered into the VQI as of January 31, 2022. Any subsequent changes or updates to data after that date will not be reflected in this report.
- Procedure timeframes and inclusion/exclusion criteria are given at the top of each report. Cases are also excluded if outcomes are missing or not enough data was entered to determine whether the case met inclusion/exclusion criteria.
- Regions must have at least 3 centers with included cases for regional results to be displayed in tables and line charts.
- Regions must have at least 3 centers with at least 10 included cases per center for regional results to be displayed in bar charts. It is therefore possible for a region's results to be displayed in tables and line charts, but not in bar charts.
- For risk-adjusted reports, regions must have at least 3 centers with at least 10 *complete* cases per center for regional results to be displayed in bar charts. It is therefore possible for a region's results to be displayed in tables and line charts, but not in bar charts.
- In all graphics, "\*" indicates a p-value <.05.

## Important Updates

The following updates have been implemented to enhance and improve the Spring 2022 VQI Regional Quality Report:

- **Number of Centers Displayed**
  - All center-variation bar charts now show the number of centers displayed in the chart, as well as the total number of centers in the region contributing data to the associated report.
- **Updated Region Volume Appendix**
  - The Region Volume Appendix now contains entries for the “Procedure Volume” and “Procedure Volume, All Years” reports.

## Report-Specific Updates

The following report-specific updates have been implemented to enhance and improve the specified report(s):

- TFEM CAS
  - Changed inclusion/exclusion criteria – Procedures with an approach of either Brachial or Radial are now included in both ASYMP and SYMP reports.
- EVAR: SVS Sac Size Guideline
  - Nomenclature change to “EVAR: SVS AAA Diameter Guideline”. No changes to the report itself.

## 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.*

# RMVQI Regional Dashboard

Procedure Group	Outcome	Your Center	Your Region	VQI Overall
All	Procedure Volume	[12   19   100   196   252]		[7   19   76   203   413]
	Procedure Volume, All Years	[19   51   229   1034   2280]		[12   47   266   1294   3153]
Multiple	Long-Term Follow-up	52.8% [5   43   62   77   95]		71.1% [0   37   73   89   96]
	Discharge Medications	82.3% [67   78   89   95   100]		86.1% [73   82   90   97   100]
TFEM CAS ASYMP	Stroke/Death	0% [0   0   0   0   0]		1.7% [0   0   0   0   3]
TFEM CAS SYMP	Stroke/Death	1.8% [0   0   0   0   0]		4.7% [0   0   0   0   13]
TCAR ASYMP	Stroke/Death	1.7% [0   0   0   0   4]		1.3% [0   0   0   0   4]
TCAR SYMP	Stroke/Death	3.5% [0   0   0   0   16]		2.6% [0   0   0   0   10]
CEA ASYMP	Stroke/Death	1.5% [0   0   0   0   7]		0.9% [0   0   0   0   3]
CEA SYMP	Postop LOS>1 Day	22.2% [0   10   18   26   47]		21.7% [0   11   20   32   50]
	Stroke/Death	1.8% [0   0   0   0   6]		2.2% [0   0   0   0   8]
EVAR	Postop LOS>1 Day	41.8% [14   36   45   53   75]		40.8% [0   25   40   56   75]
	Postop LOS>2 Days	9.7% [0   0   7   14   15]		16.7% [0   7   15   23   34]
	Sac Diameter Reporting	42.2% [0   31   52   69   89]		58% [0   38   60   77   87]
	SVS AAA Diameter Guideline	73.2% [52   65   69   80   85]		75.3% [50   64   76   86   100]
TEVAR	Sac Diameter Reporting	55.6% [39   52   60   70   76]		59.3% [0   33   58   78   94]
OAAA	In-Hospital Mortality	4.5% [0   0   0   7   13]		4.2% [0   0   0   7   15]
	SVS Cell-Saver Guideline	94.7% [84   94   96   100   100]		92.4% [73   89   98   100   100]
	SVS Iliac Inflow Guideline	97.1% [92   97   100   100   100]		97.6% [92   98   100   100   100]
PVI CLAUD	ABI/Toe Pressure	63.2% [33   53   72   90   100]		74.8% [39   63   82   93   100]
INFRA CLTI	Major Complications	2.8% [0   0   0   2   6]		4.9% [0   0   3   7   12]
SUPRA CLTI	Major Complications	9.6% [0   0   0   38   64]		8.1% [0   0   0   12   25]
LEAMP	Postop Complications	8.6% [2   4   7   13   22]		11.7% [0   3   8   15   21]
HDA	Primary AVF vs. Graft	87.1% [69   78   90   95   97]		82.4% [64   73   84   91   100]
IVCF	Filter Retrieval Reporting	NA (<3 centers)		54.5% [9   31   52   72   87]

# RMVQI Volume Appendix

## Spring 2022

### 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.

Report	Included Cases	Centers with Included Cases	Centers with at least 10 Included Cases	Complete Cases	Centers with Complete Cases	Centers with at least 10 Complete Cases
Procedure Volume	6352	46	41			
Procedure Volume, All Years	41384	51	47			
Long-Term Follow-up	5045	34	29			
Discharge Medications	4825	44	39			
TFEM CAS ASYMP: Stroke/Death	87	13	2	82	13	2
TFEM CAS SYMP: Stroke/Death	55	12	1	53	12	1
TCAR ASYMP: Stroke/Death	302	27	11	282	27	10
TCAR SYMP: Stroke/Death	171	25	9	163	25	8
CEA ASYMP: Stroke/Death	397	22	15	382	22	15
CEA ASYMP: Postop LOS>1 Day	397	22	15	382	22	15
CEA SYMP: Stroke/Death	275	21	12	264	21	12
CEA SYMP: Postop LOS>1 Day	275	21	12	264	21	12
EVAR: Postop LOS>2 Days	485	23	18	461	23	17
EVAR: Sac Diameter Reporting	445	20	18			
EVAR: SVS AAA Diameter Guideline	441	23	17			
TEVAR: Sac Diameter Reporting	72	7	4			
OAAA: In-Hospital Mortality	224	16	8	221	16	8
OAAA: SVS Cell-Saver Guideline	228	16	8			
OAAA: SVS Iliac Inflow Guideline	273	16	10			
PVI CLAUD: ABI/Toe Pressure	863	21	17			
INFRA CLTI: Major Complications	250	15	10			
SUPRA CLTI: Major Complications	52	10	1			
LEAMP: Postop Complications	105	4	4			
HDA: Primary AVF vs. Graft	340	8	7			
IVCF: Filter Retrieval Reporting	0	0	0			

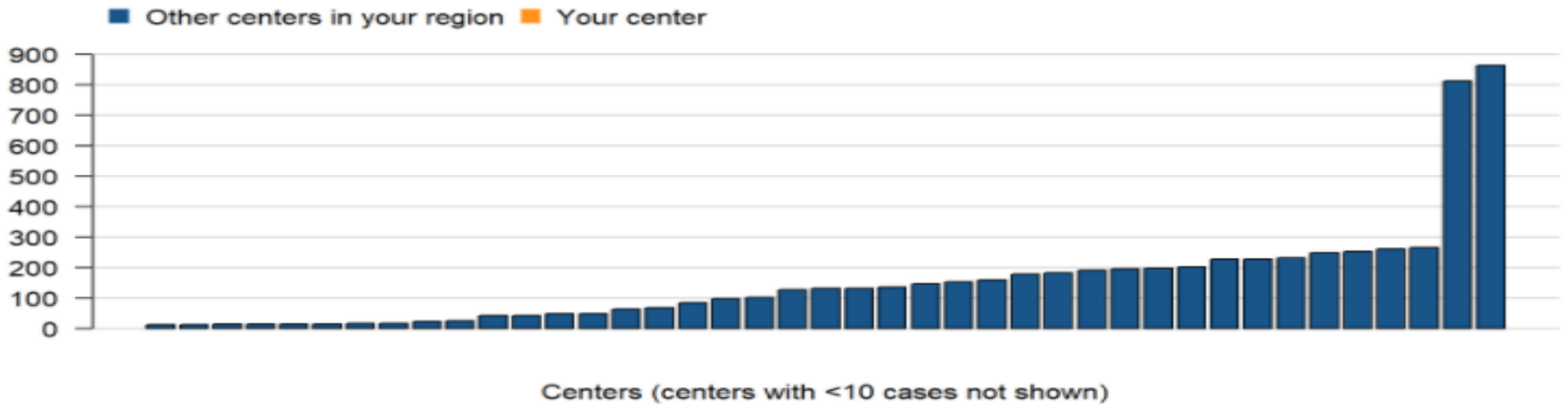
## Procedure Volume

Procedures performed between January 1 and December 31, 2021

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

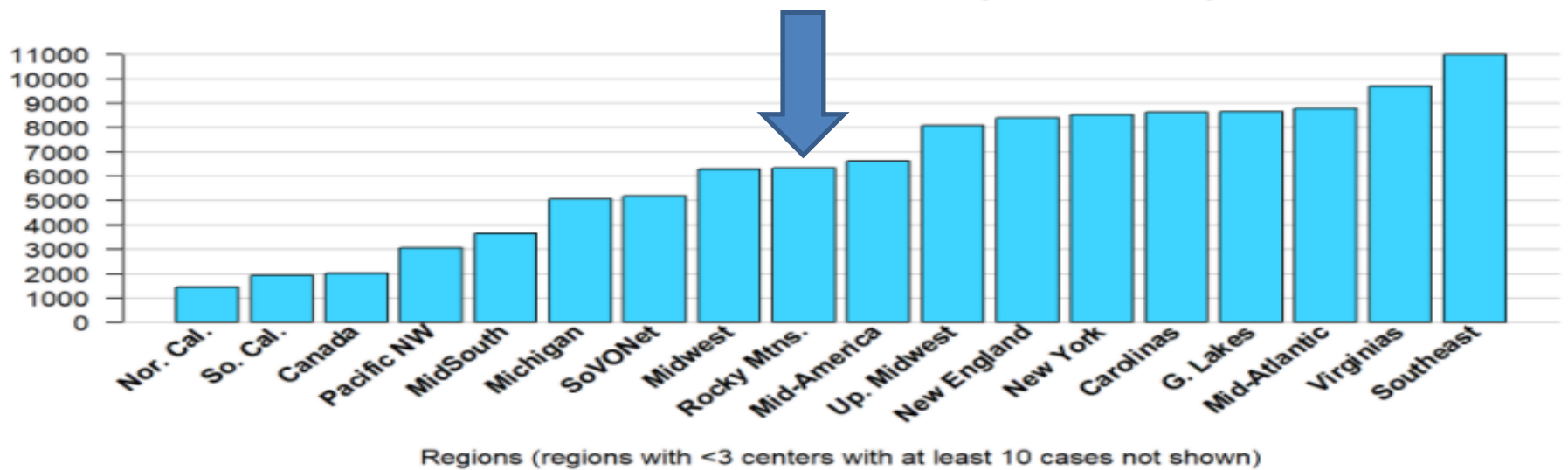
	Your Center (N)	Your Region (N)	VQI Overall (N)
CAS (TFEM CAS & TCAR)		765	15409
CEA		791	17679
EVAR		529	7653
HDA		437	5978
INFRA		347	6789
IVCF		NA (<3 centers)	1322
LEAMP		105	3085
OAAA		71	1283
PVI		2307	43995
SUPRA		77	1870
TEVAR		147	3163
Varicose Veins		776	5991
Overall (Jan-Dec 2021)		6352	114217
Overall (Jan-Dec 2020)		6728	111113

### Procedure Volume by Center in Your Region (Jan-Dec 2021)



41 of 46 centers displayed

### Procedure Volume Across VQI (Jan-Dec 2021)



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

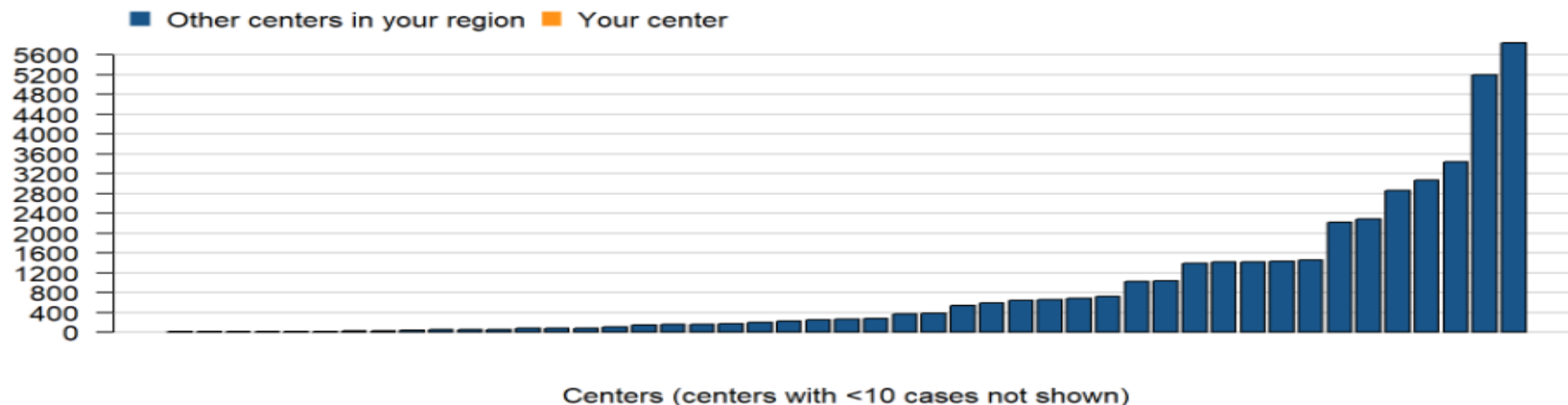
## Procedure Volume, All Years

Includes all procedures with procedure date through December 31, 2021

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

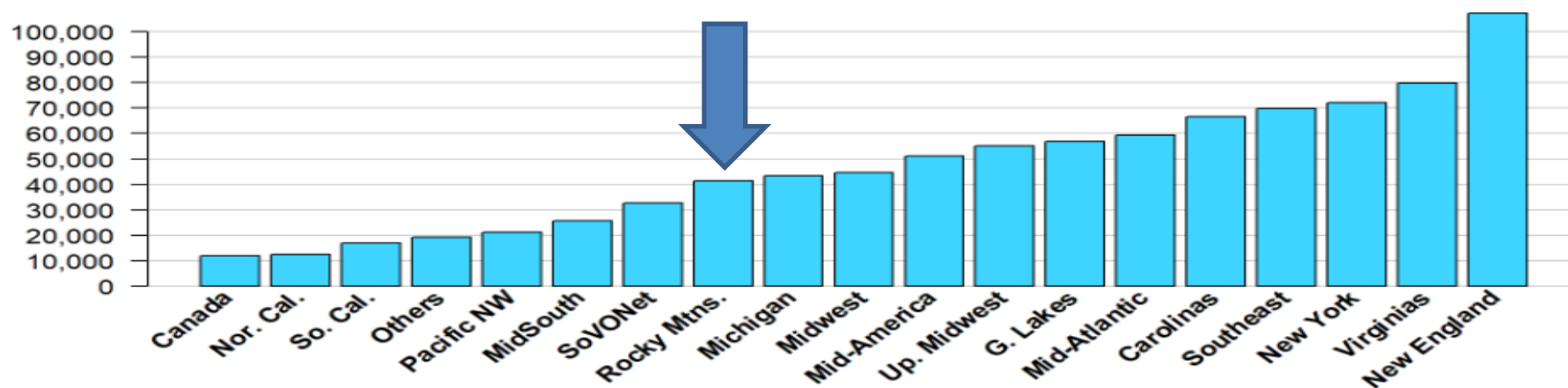
	Your Center (N)	Your Region (N)	VQI Overall (N)
CAS (TFEM CAS & TCAR)		2793	66792
CEA		6571	167675
EVAR		3928	67929
HDA		4123	66228
INFRA		2678	70209
IVCF		NA (<3 centers)	16522
LEAMP		463	23123
OAAA		736	15617
PVI		14319	299452
SUPRA		805	22545
TEVAR		750	22625
Varicose Veins		4218	50680
Overall		41384	889397

### Procedure Volume by Center in Your Region (Through Dec 2021)



47 of 51 centers displayed

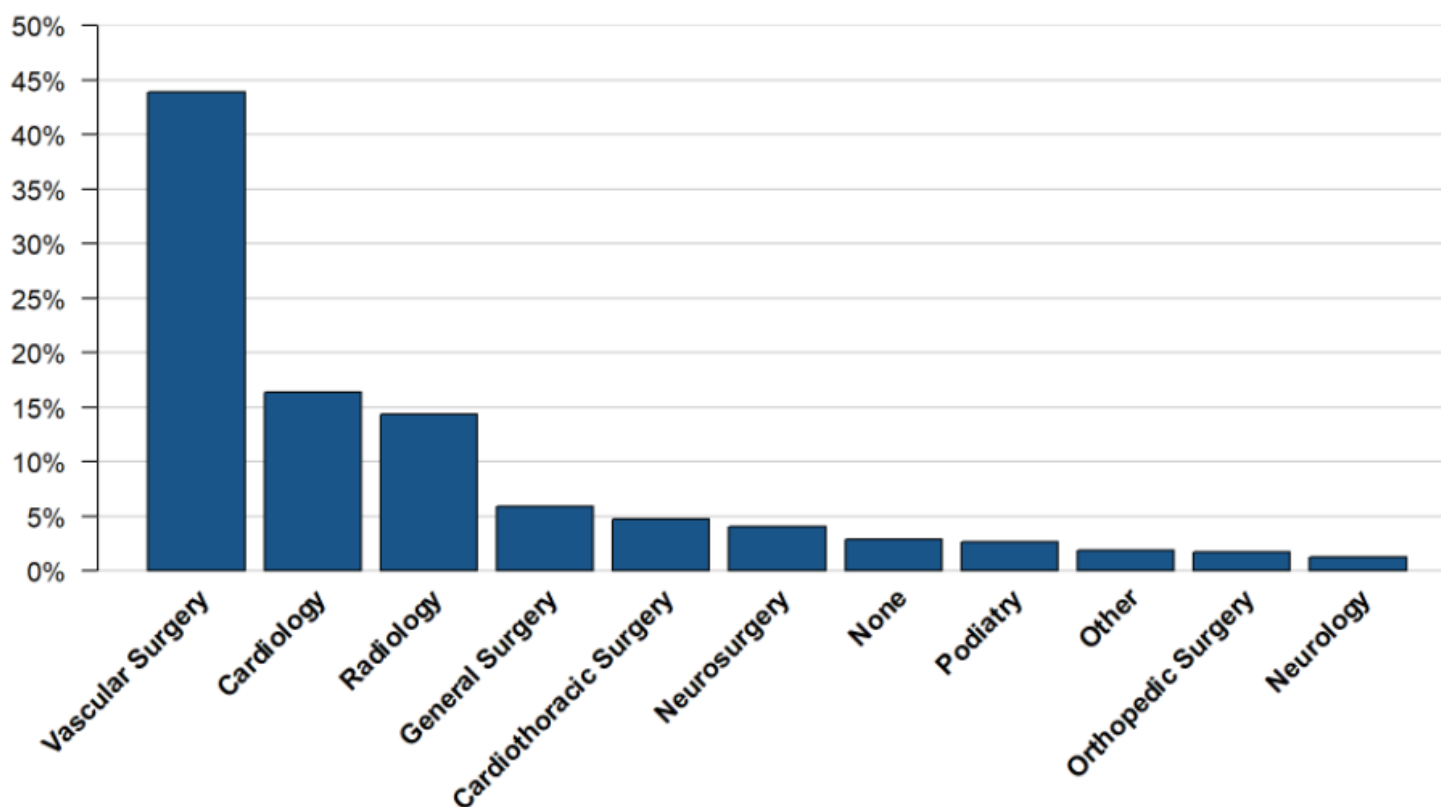
### Procedure Volume Across VQI (Through Dec 2021)



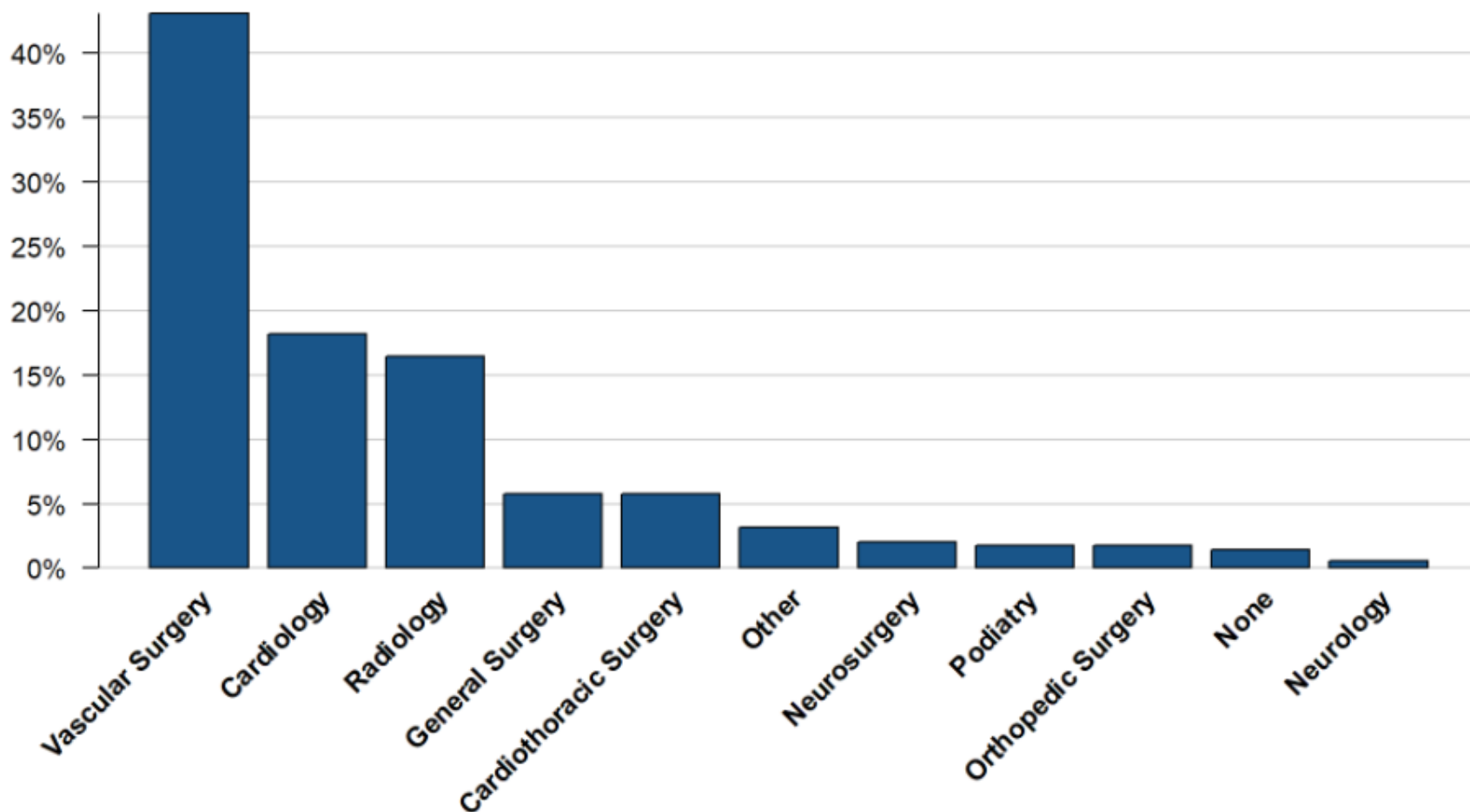
"Others" indicates centers that do not belong to a regional group.

## Physician Specialties

Physician Specialties Across VQI (as of January 31, 2022, N=5849 Physicians)



## Physician Specialties Across Your Region (as of January 31, 2022, N=346 Physicians)



## Long-Term Follow-up

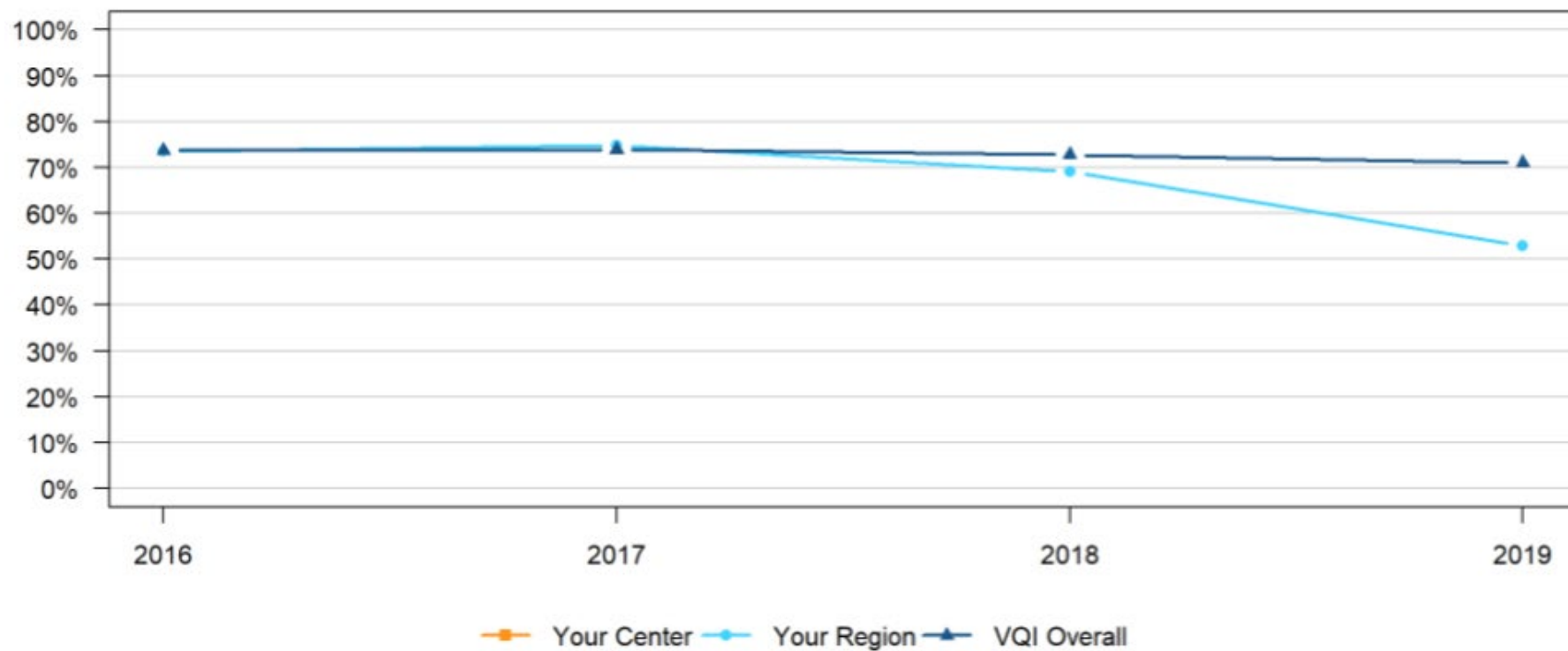
Procedures performed between January 1 and December 31, 2019

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

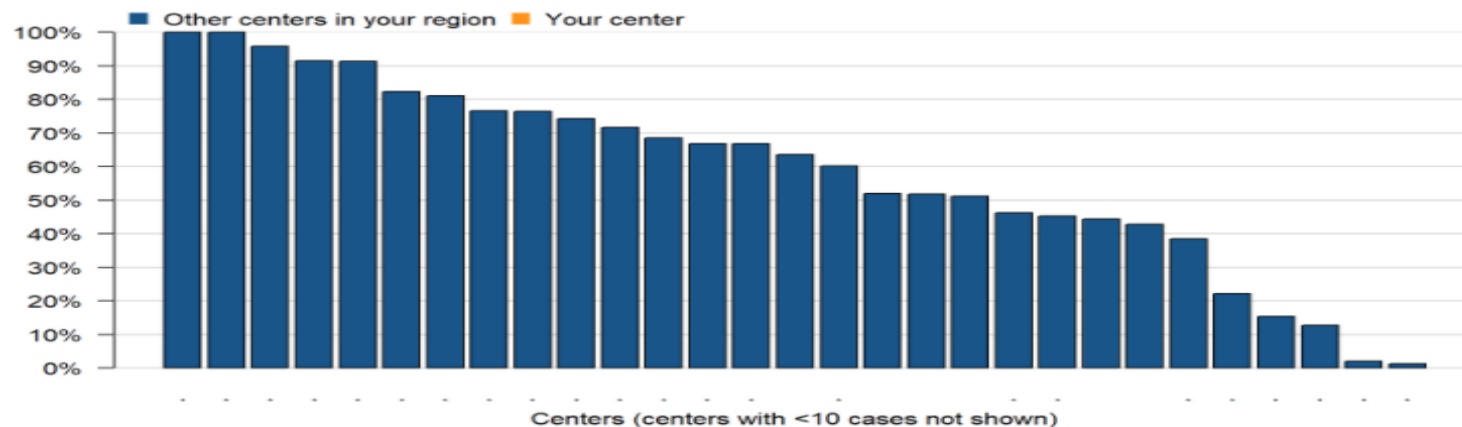
The table below gives the number of procedures meeting the inclusion criteria, and the percentage of those procedures with follow-up recorded between 9 and 21 months post-procedure.

	Your Center	Your Region	VQI Overall
CAS		445 (59%)	11358 (66%)
CEA		828 (57%)	19463 (73%)
EVAR		461 (52%)	7711 (72%)
HDA		577 (63%)	8378 (69%)
INFRA		312 (69%)	7383 (74%)
IVCF		NA (<3 centers)	1887 (76%)
LEAMP		83 (27%)	3199 (72%)
OAAA		60 (68%)	1250 (74%)
PVI		2108 (45%)	40101 (71%)
SUPRA		77 (56%)	2269 (73%)
TEVAR		94 (70%)	2961 (68%)
Overall (Jan-Dec 2019)		5045 (53%)	105960 (71%)
Overall (Jan-Dec 2018)		4288 (69%)	95242 (73%)

## Long-Term Follow-Up by Year



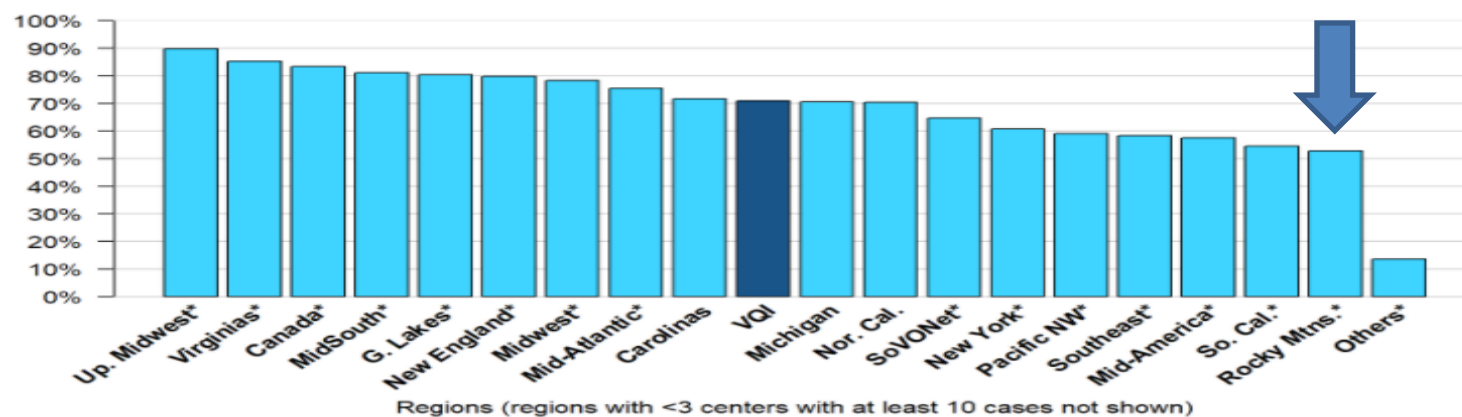
### Long-Term Follow-Up by Center in Your Region (Jan-Dec 2019)



29 of 34 centers displayed

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

### Long-Term Follow-Up by Region Across VQI (Jan-Dec 2019)



\*\*\* Indicates region's rate differs significantly from the VQI rate.

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

## Discharge Medications

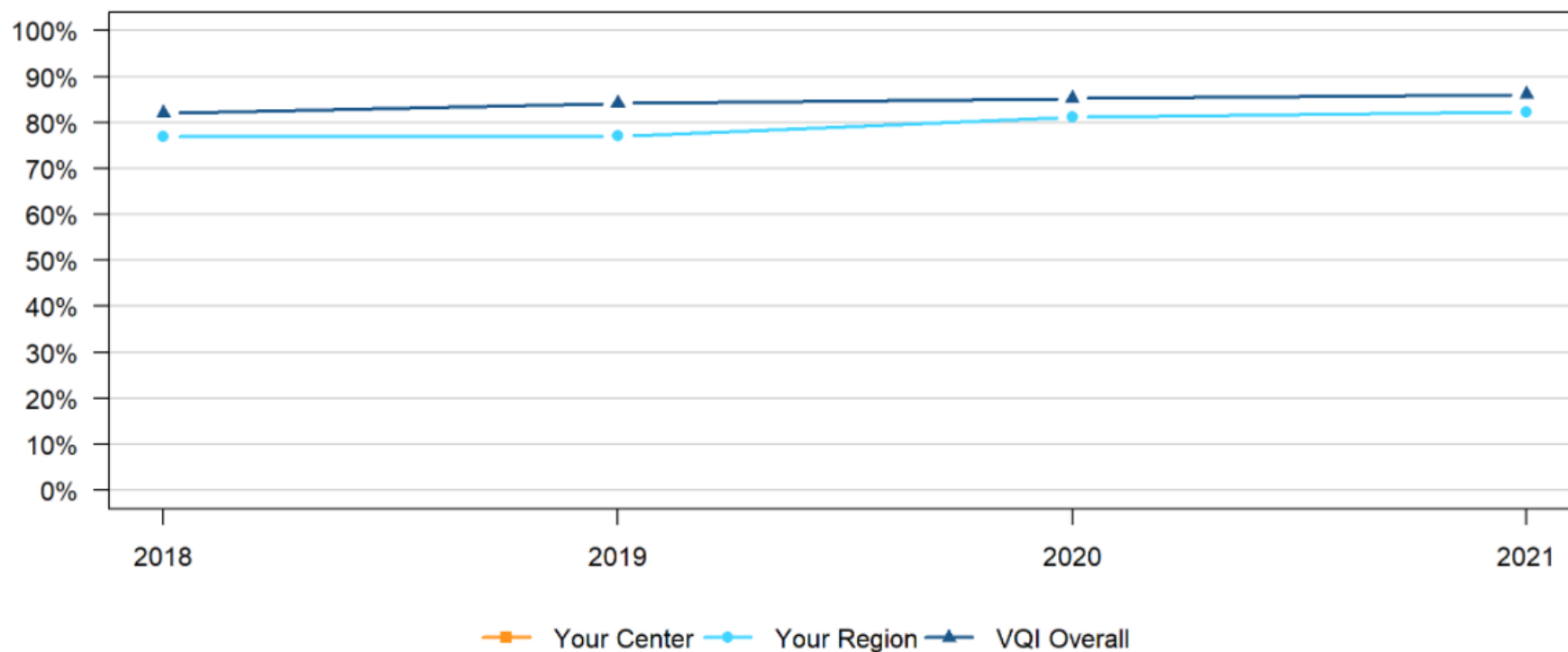
Procedures performed between January 1 and December 31, 2021

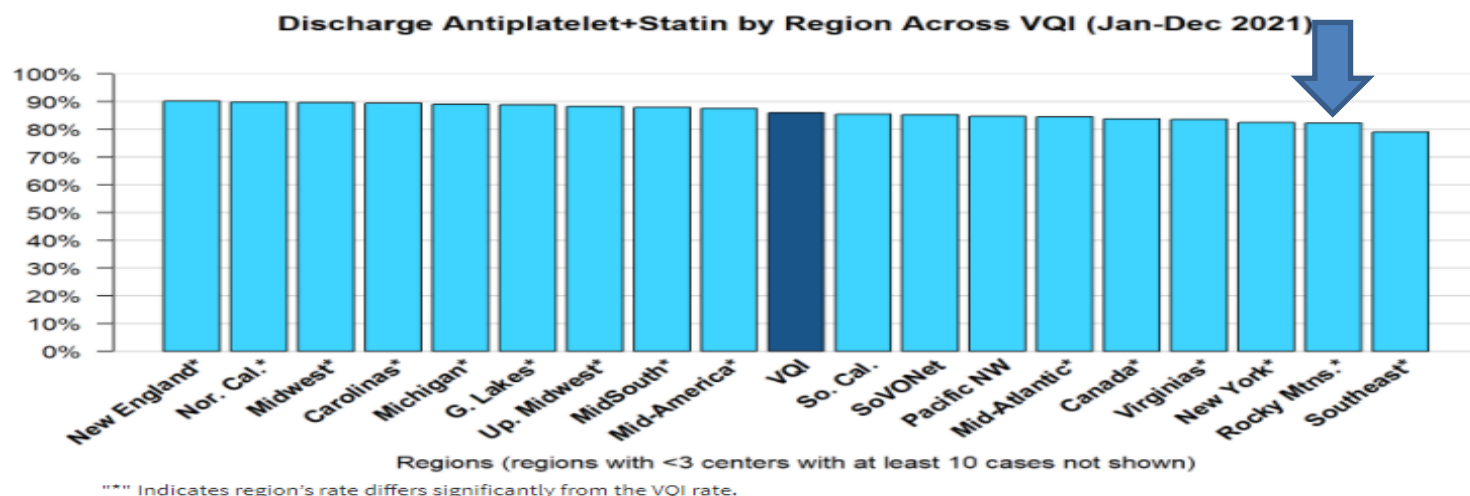
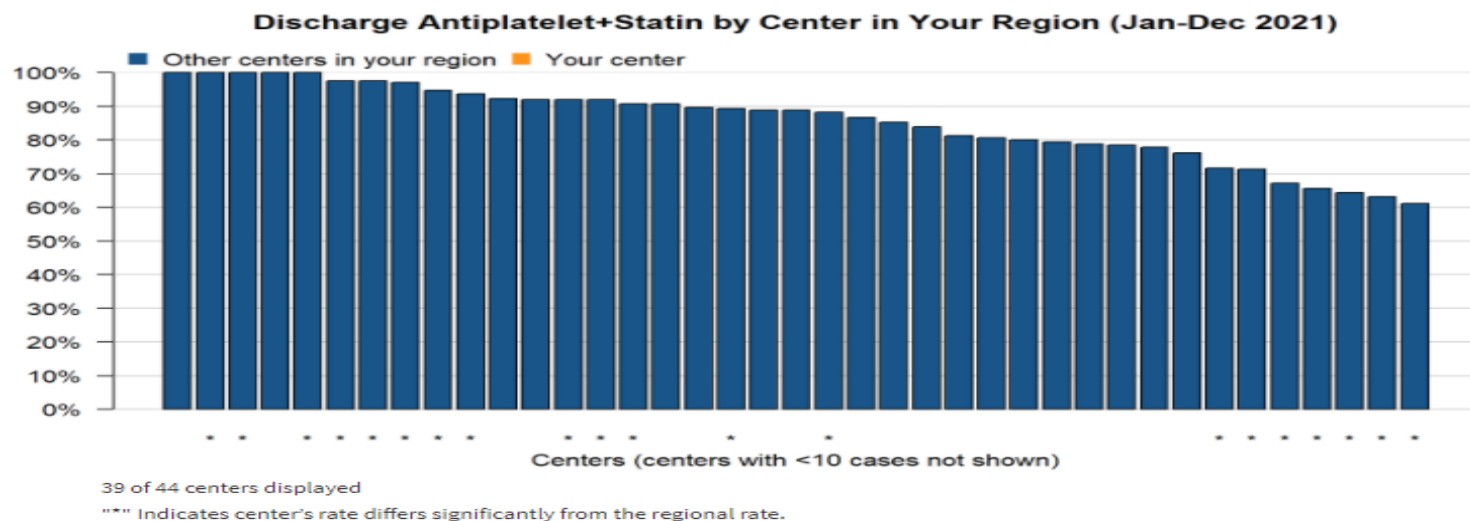
Includes CAS (TFEM CAS and TCAR), CEA, EVAR, INFRA, LEAMP, OAAA, PVI, SUPRA, and TEVAR procedures only. Antiplatelet is defined as ASA or P2Y12 inhibitor. Cases are excluded if (1) Discharge Statin = "No, for medical reason" OR (2) Both Discharge ASA = "No, for medical reason" AND Discharge P2Y12 inhibitor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

	Number of Procedures at Your Center	Antiplatelet+Statin	Antiplatelet Only	Statin Only	Neither
CAS					
CEA					
EVAR					
INFRA					
LEAMP					
OAAA					
PVI					
SUPRA					
TEVAR					
Your Center Overall					
Your Region Overall	4825	82%	11%	5%	2%
VQI Overall	94988	86%	9%	3%	2%

### Discharge Antiplatelet+Statin by Year





## TFEM CAS ASYMP: Stroke/Death

Procedures performed between January 1 and December 31, 2021

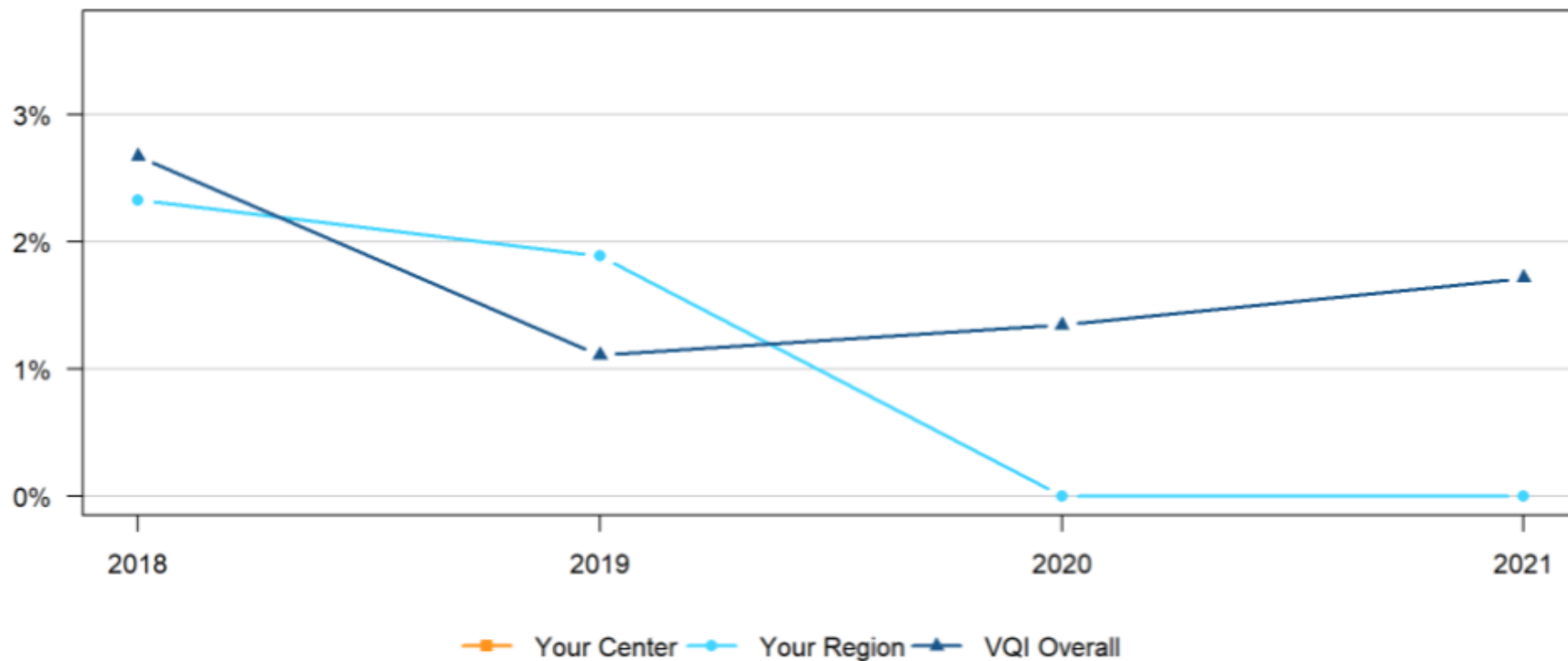
Includes Transfemoral Carotid Artery Stenting (TFEM CAS) procedures performed on asymptomatic patients. Asymptomatic patients are patients with no ipsilateral or contralateral retinal or cortical TIA or stroke within 180 days prior to surgery. Includes procedures utilizing a femoral, brachial, or radial approach. 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, brachial, or radial are also excluded.

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

	<b>Your Center</b>	<b>Your Region</b>	<b>VQI Overall</b>
Number of TFEM CAS procedures meeting inclusion criteria		87	2334
Observed rate of stroke or death among procedures meeting inclusion criteria		0%	1.7%
Number of procedures with complete data*		82	2125
Observed rate of stroke or death among cases with complete data		0%	1.6%
Expected rate of stroke or death among cases with complete data		1.3%	NA
P-value for comparison of observed and expected rates		0.63	NA

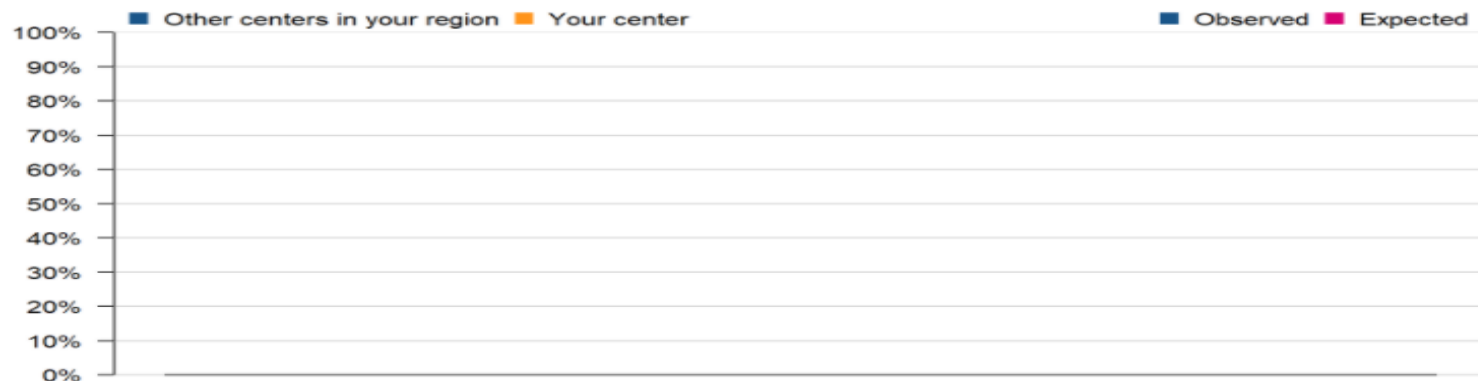
\*“Expected rate” is the rate estimated by a statistical model that accounts for patient characteristics, including age, gender, race, BMI, comorbidities, medication and stroke and vascular history. “Cases with complete data” include patients who have data on all of those factors.

## Stroke or Death after TFEM CAS for Asymptomatic Patients by Year



Rates shown are observed rates among cases meeting inclusion criteria.

### Stroke or Death after TFEM CAS for Asymptomatic Patients in Your Region (Jan-Dec 2021)

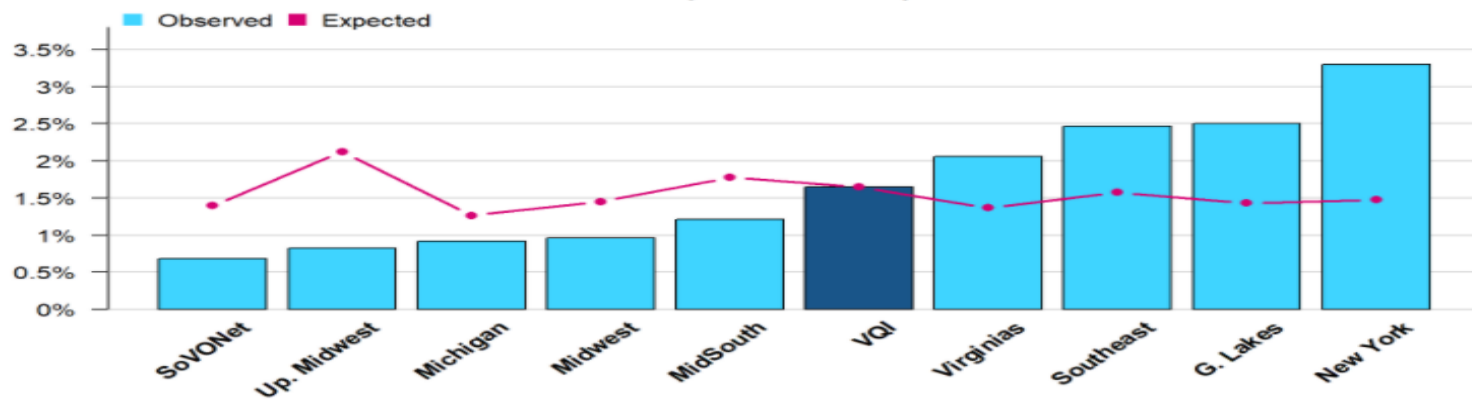


Centers (centers with <10 complete cases not shown)

0 of 13 centers displayed

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 Patients by Region Across VQI (Jan-Dec 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 January 1 and December 31, 2021

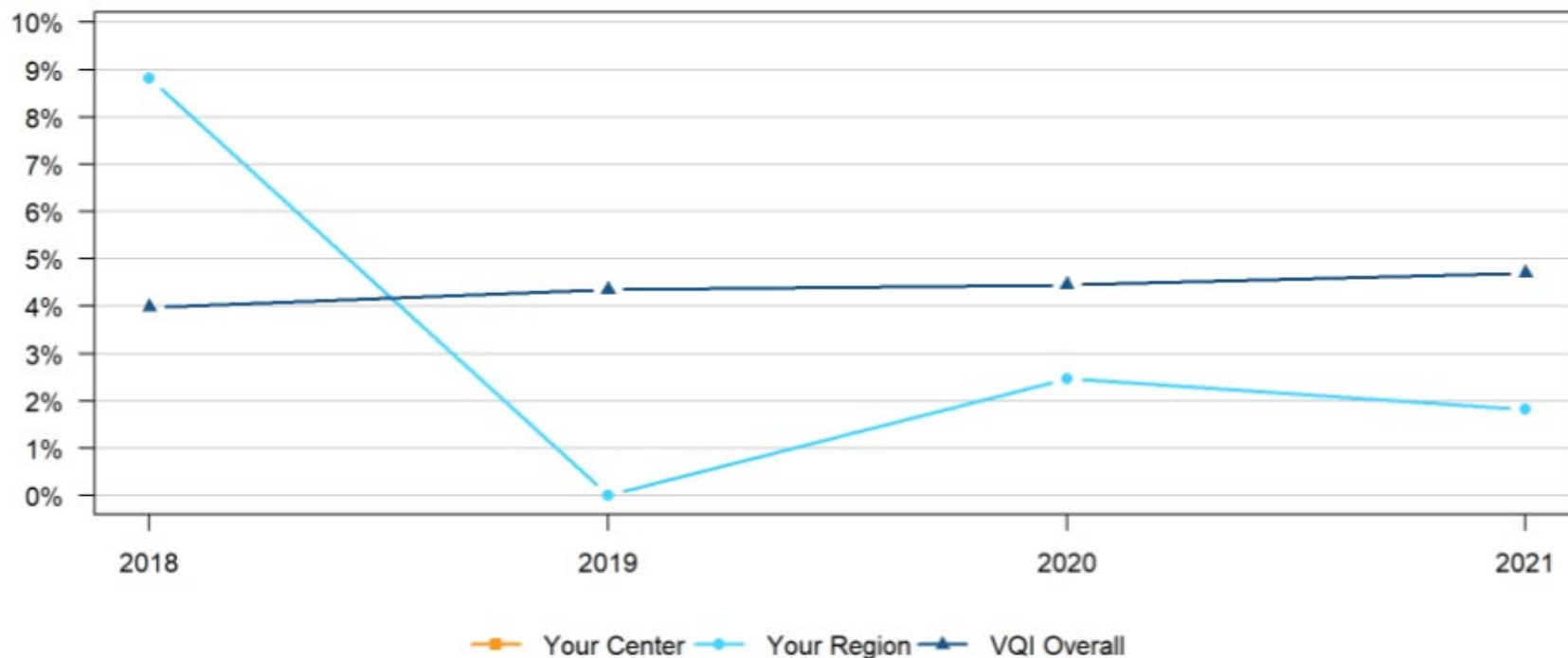
Includes Transfemoral Carotid Artery Stenting (TFEM CAS) procedures performed on symptomatic patients. Symptomatic patients are patients with an ipsilateral or contralateral retinal or cortical TIA or stroke within 180 days prior to surgery. Includes procedures utilizing a femoral, brachial, or radial approach. 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, brachial, or radial are also excluded.

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

	<b>Your Center</b>	<b>Your Region</b>	<b>VQI Overall</b>
Number of TFEM CAS procedures meeting inclusion criteria		55	2316
Observed rate of stroke or death among procedures meeting inclusion criteria		1.8%	4.7%
Number of procedures with complete data*		53	2135
Observed rate of stroke or death among cases with complete data		1.9%	4.5%
Expected rate of stroke or death among cases with complete data		4.2%	NA
P-value for comparison of observed and expected rates		0.73	NA

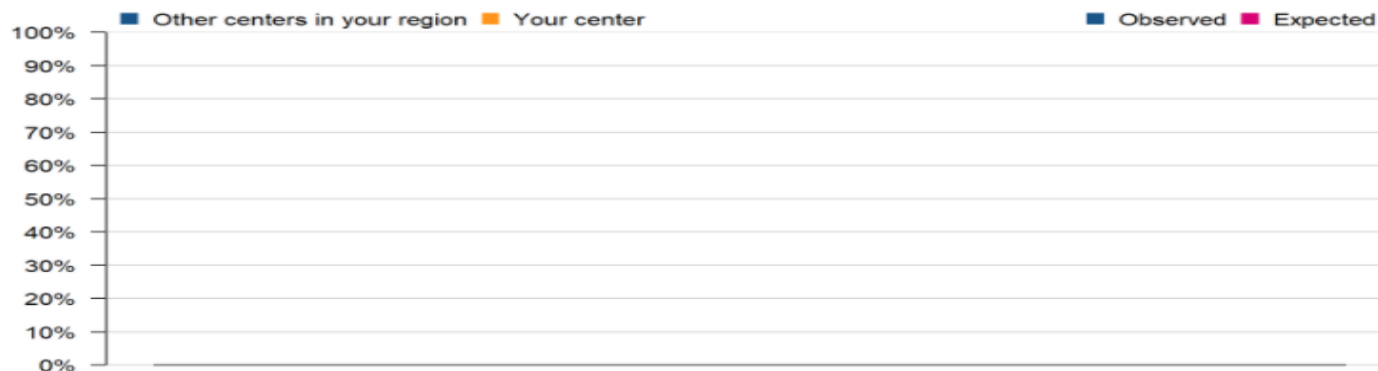
\*“Expected rate” is the rate estimated by a statistical model that accounts for patient characteristics, including age, gender, race, BMI, comorbidities, medication and stroke and vascular history. “Cases with complete data” include patients who have data on all of those factors.

### Stroke or Death after TFEM CAS for Symptomatic Patients by Year



Rates shown are observed rates among cases meeting inclusion criteria.

### Stroke or Death after TFEM CAS for Symptomatic Patients in Your Region (Jan-Dec 2021)

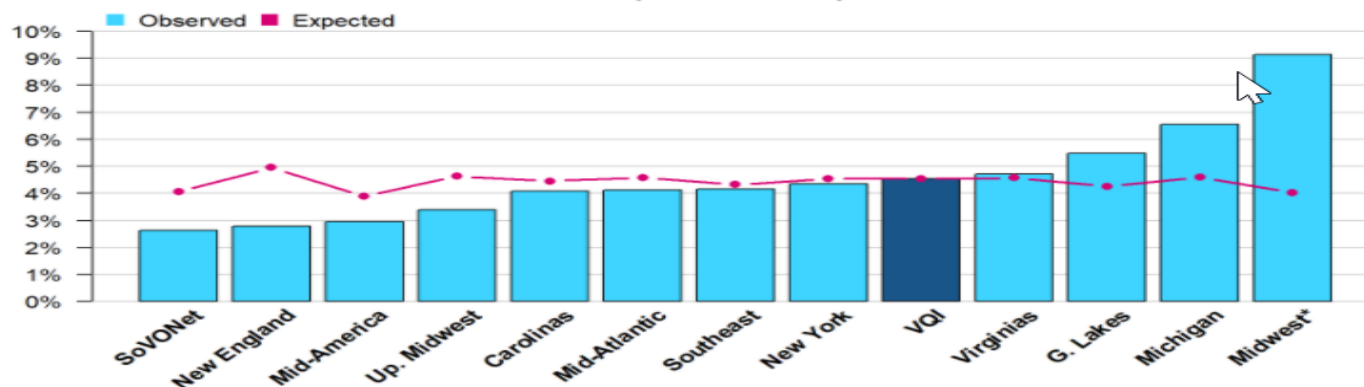


Centers (centers with <10 complete cases not shown)

0 of 12 centers displayed

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 Patients by Region Across VQI (Jan-Dec 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 January 1 and December 31, 2021

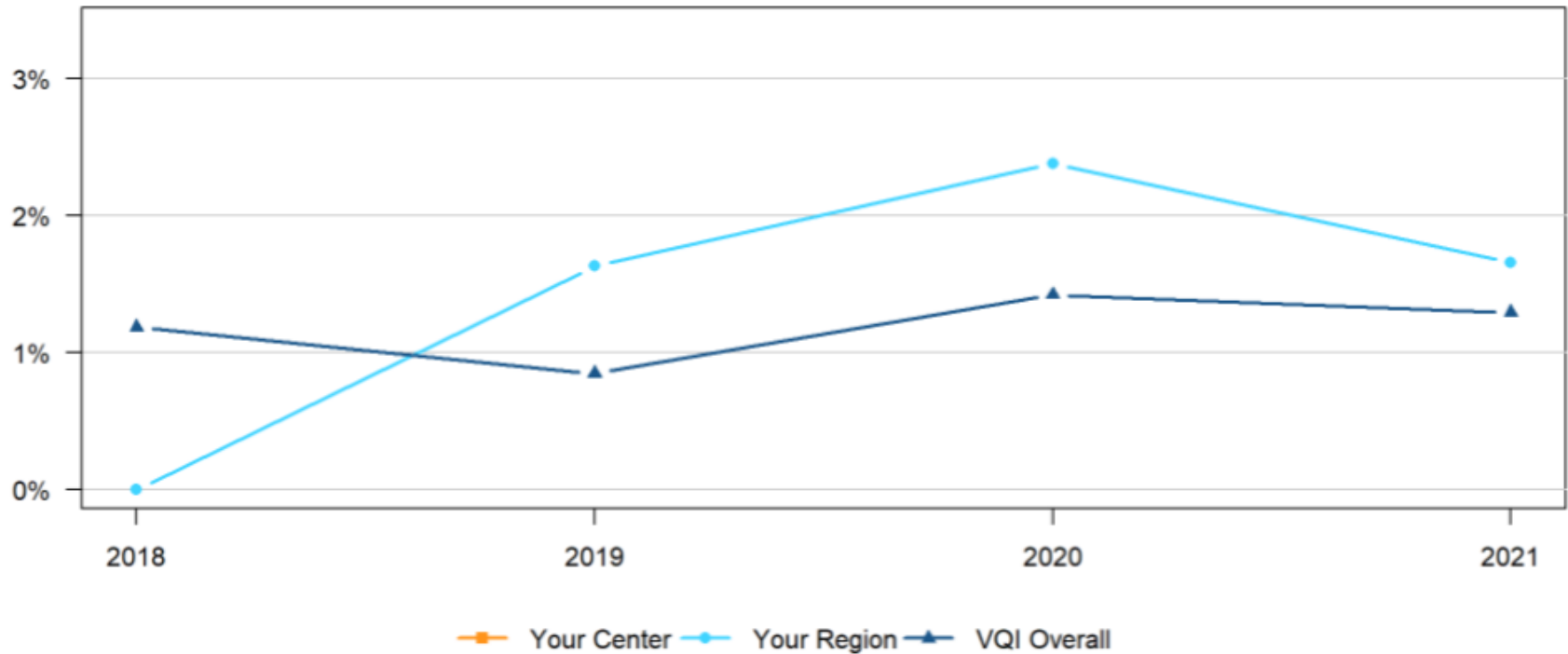
Includes TransCarotid Artery Revascularization (TCAR) procedures performed on asymptomatic patients. Asymptomatic patients are patients with no ipsilateral or contralateral retinal or cortical TIA or stroke within 180 days prior to surgery. Excludes any patient with prior vertebrobasilar TIA or stroke, 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 patients) meeting the inclusion criteria, and the observed and expected rates of in-hospital stroke or death for those cases.

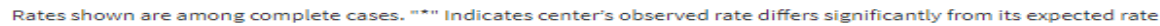
	<b>Your Center</b>	<b>Your Region</b>	<b>VQI Overall</b>
Number of TCAR procedures meeting inclusion criteria		302	5108
Observed rate of stroke or death among procedures meeting inclusion criteria		1.7%	1.3%
Number of procedures with complete data*		282	4840
Observed rate of stroke or death among cases with complete data		1.8%	1.2%
Expected rate of stroke or death among cases with complete data		1.3%	NA
P-value for comparison of observed and expected rates		0.43	NA

\*“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 Patients by Year



Rates shown are observed rates among cases meeting inclusion criteria.



## TCAR SYMP: Stroke/Death

Procedures performed between January 1 and December 31, 2021

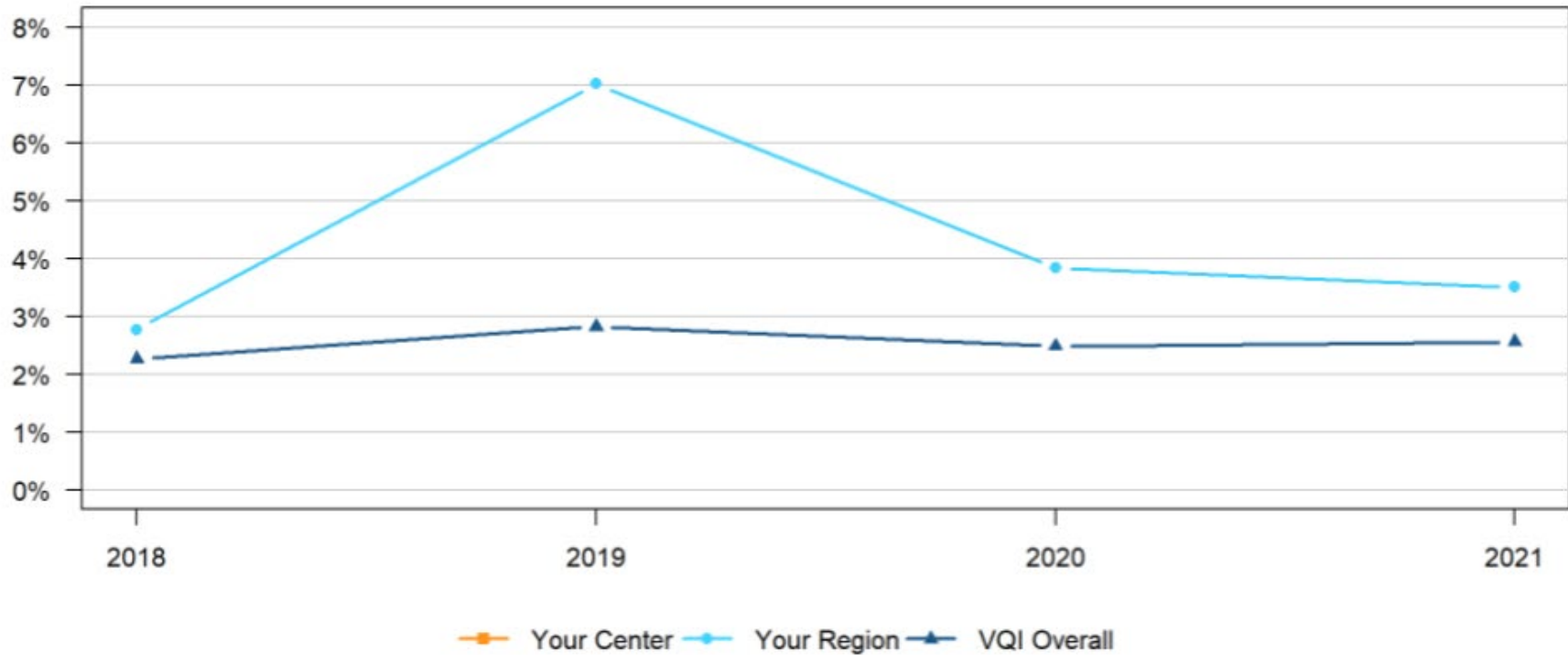
Includes TransCarotid Artery Revascularization (TCAR) procedures performed on symptomatic patients. Symptomatic patients are patients with an ipsilateral or contralateral retinal or cortical TIA or stroke within 180 days prior to surgery. Excludes any patient with prior vertebrobasilar TIA or stroke, 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 patients) meeting the inclusion criteria, and the observed and expected rates of in-hospital stroke or death for those cases.

	Your Center	Your Region	VQI Overall
Number of TCAR procedures meeting inclusion criteria		171	2611
Observed rate of stroke or death among procedures meeting inclusion criteria		3.5%	2.6%
Number of procedures with complete data*		163	2498
Observed rate of stroke or death among cases with complete data		3.7%	2.6%
Expected rate of stroke or death among cases with complete data		2.9%	NA
P-value for comparison of observed and expected rates		0.48	NA

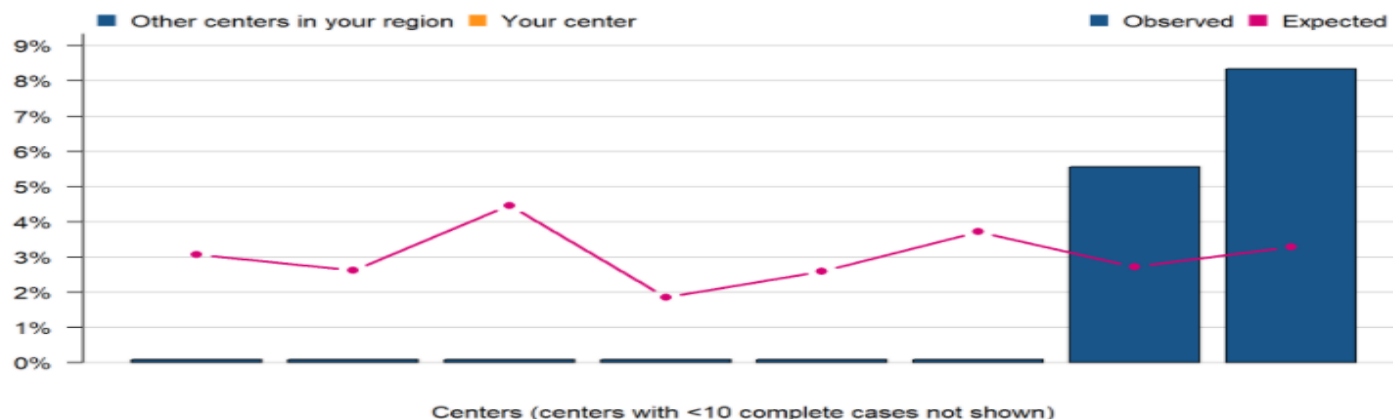
\*"Expected rate" is the rate estimated by a statistical model that accounts for patient characteristics, including age, gender, race, BMI, comorbidities, medication and stroke and vascular history. "Cases with complete data" include patients who have data on all of those factors.

## Stroke or Death after TCAR for Symptomatic Patients by Year



Rates shown are observed rates among cases meeting inclusion criteria.

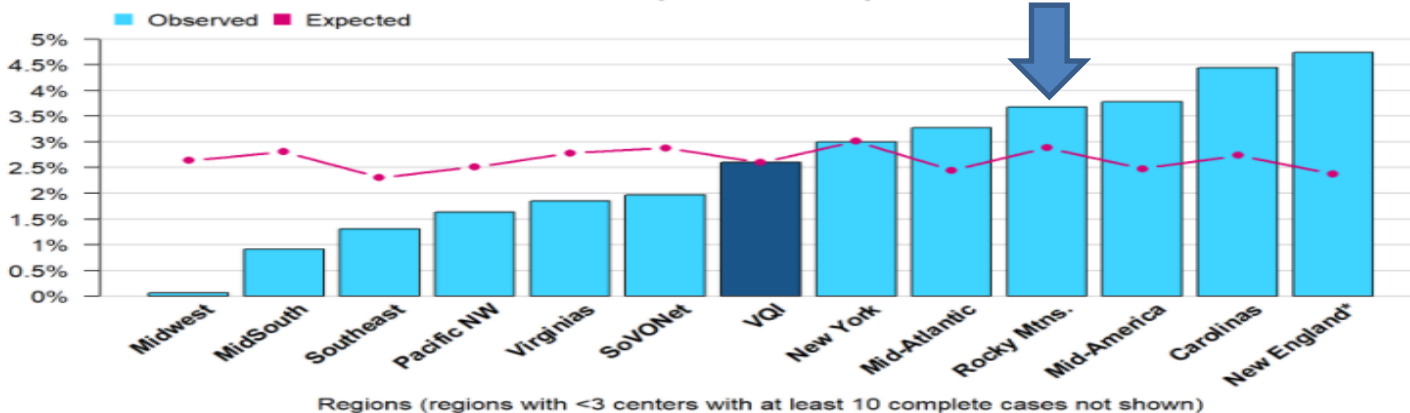
### Stroke or Death after TCAR for Symptomatic Patients in Your Region (Jan-Dec 2021)



8 of 25 centers displayed

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

### Stroke or Death after TCAR for Symptomatic Patients by Region Across VQI (Jan-Dec 2021)



Rates shown are among complete cases. "\*\*\*" Indicates region's observed rate differs significantly from its expected rate

## CEA ASYMP: Stroke/Death

Procedures performed between January 1 and December 31, 2021

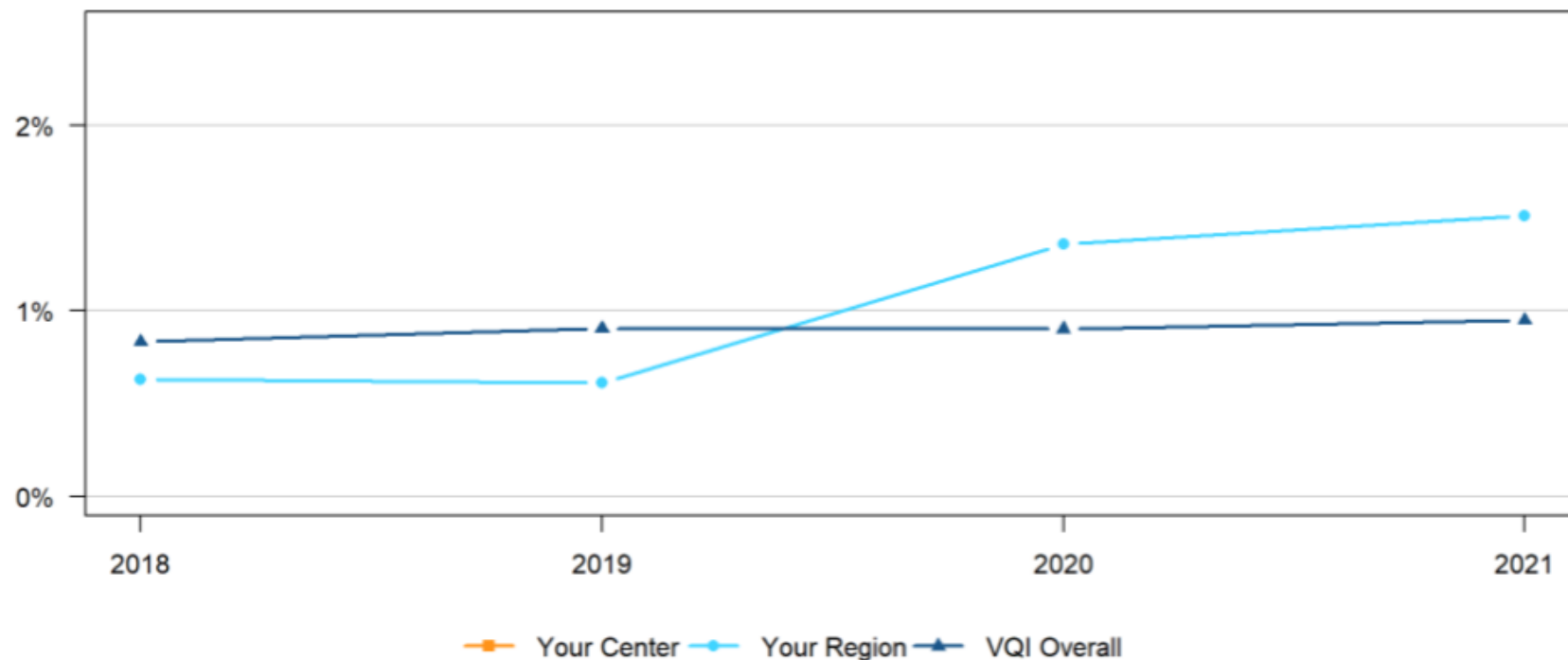
Includes Carotid Endarterectomy (CEA) procedures performed on asymptomatic patients. Asymptomatic patients are patients with no ipsilateral retinal or cortical TIA or stroke within 180 days prior to surgery. Excludes any patient with prior vertebrobasilar or non-specific TIA or stroke, prior ipsilateral 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 patients) meeting the inclusion criteria, and the observed and expected rates of in-hospital stroke or death for those cases.

	<b>Your Center</b>	<b>Your Region</b>	<b>VQI Overall</b>
Number of CEA procedures meeting inclusion criteria		397	10107
Observed rate of stroke or death among procedures meeting inclusion criteria		1.5%	0.9%
Number of procedures with complete data*		382	9627
Observed rate of stroke or death among cases with complete data		1.6%	1%
Expected rate of stroke or death among cases with complete data		0.8%	NA
P-value for comparison of observed and expected rates		0.14	NA

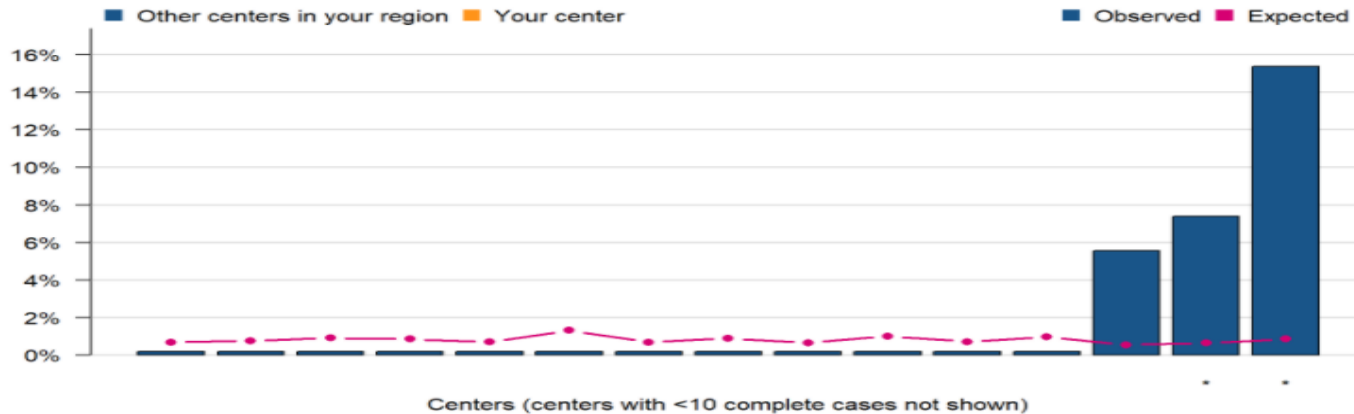
\*“Expected rate” is the rate estimated by a statistical model that accounts for patient characteristics, including age, gender, race, BMI, comorbidities, medication and stroke and vascular history. “Cases with complete data” include patients who have data on all of those factors.

## Stroke or Death after CEA for Asymptomatic Patients by Year



Rates shown are observed rates among cases meeting inclusion criteria.

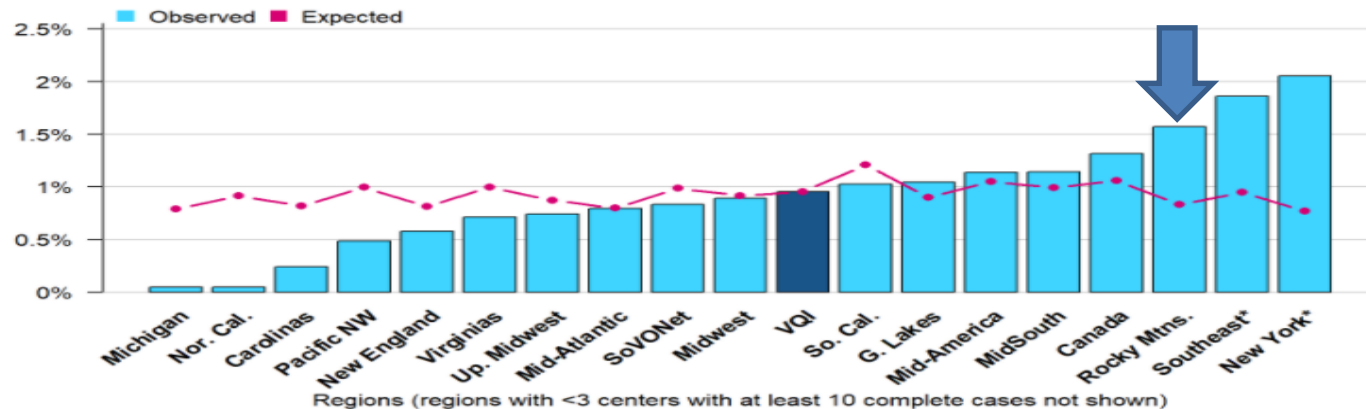
### Stroke or Death after CEA for Asymptomatic Patients in Your Region (Jan-Dec 2021)



15 of 22 centers displayed

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

**Stroke or Death after CEA for Asymptomatic Patients by Region Across VQI  
(Jan-Dec 2021)**



Rates shown are among complete cases. "\*\*\*" Indicates region's observed rate differs significantly from its expected rate

## CEA SYMP: Stroke/Death

Procedures performed between January 1 and December 31, 2021

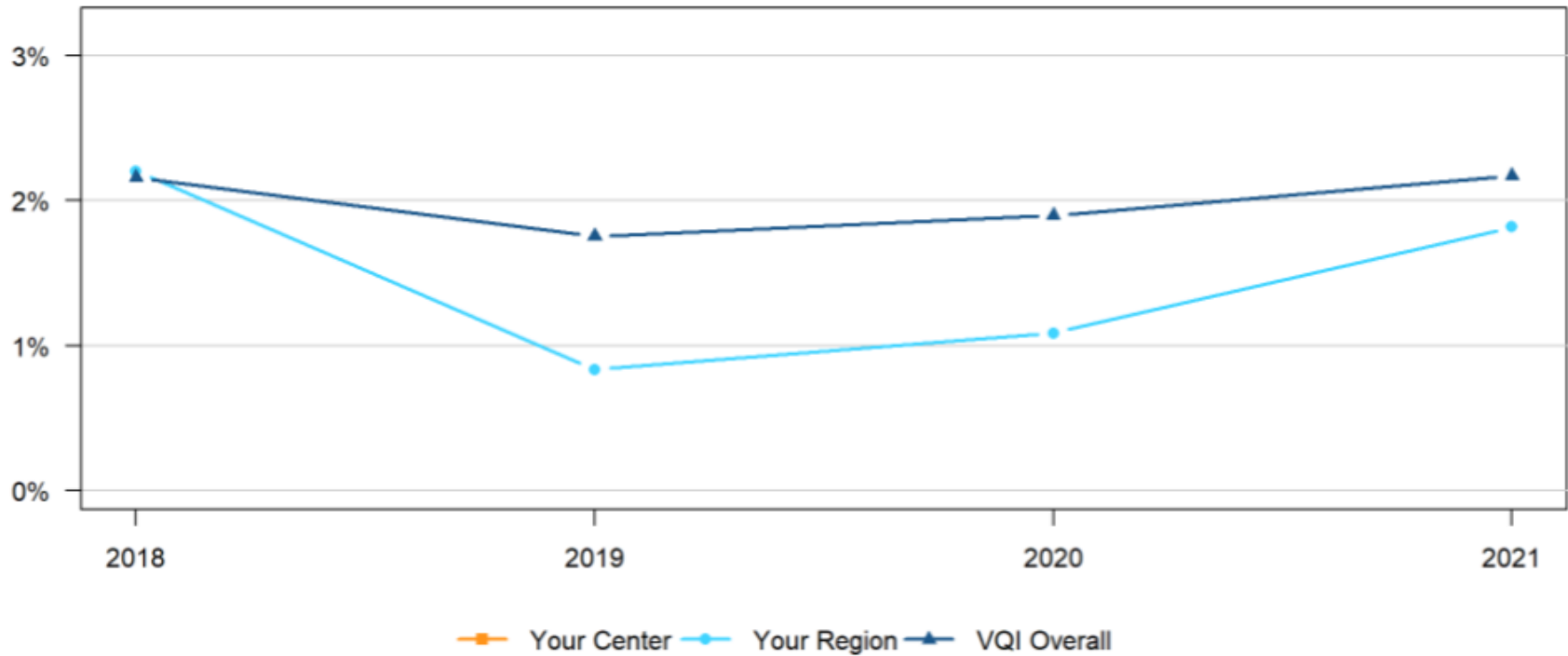
Includes Carotid Endarterectomy (CEA) procedures performed on symptomatic patients. Symptomatic patients are patients with an ipsilateral retinal or cortical TIA or stroke within 180 days prior to surgery. Excludes any patient with prior vertebrobasilar or non-specific TIA or stroke, prior ipsilateral 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 patients) meeting the inclusion criteria, and the observed and expected rates of in-hospital stroke or death for those cases.

	<b>Your Center</b>	<b>Your Region</b>	<b>VQI Overall</b>
Number of CEA procedures meeting inclusion criteria		275	5069
Observed rate of stroke or death among procedures meeting inclusion criteria		1.8%	2.2%
Number of procedures with complete data*		264	4888
Observed rate of stroke or death among cases with complete data		1.9%	2.2%
Expected rate of stroke or death among cases with complete data		1.9%	NA
P-value for comparison of observed and expected rates		0.82	NA

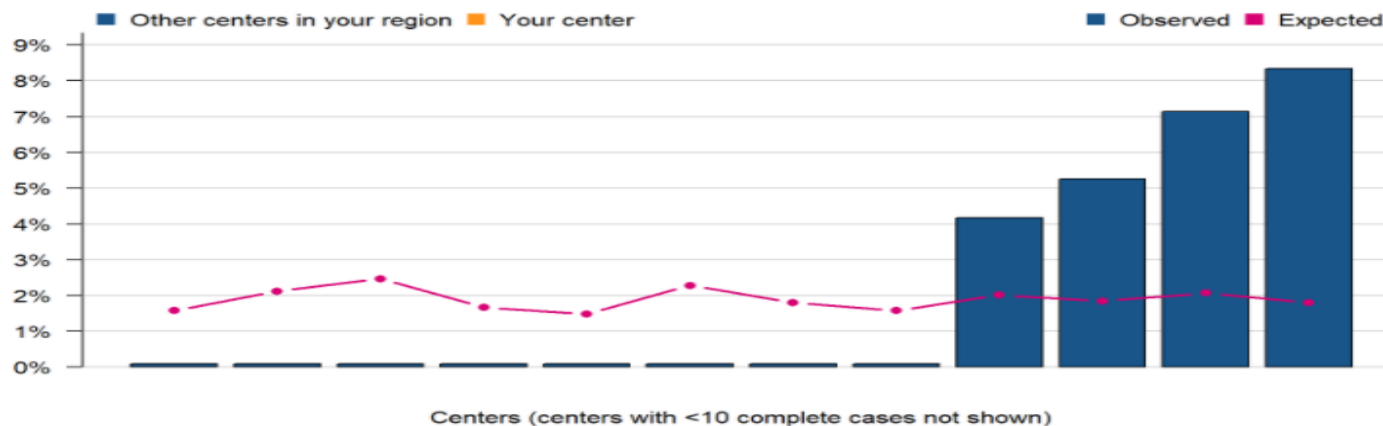
\*“Expected rate” is the rate estimated by a statistical model that accounts for patient characteristics, including age, gender, race, BMI, comorbidities, medication and stroke and vascular history. “Cases with complete data” include patients who have data on all of those factors.

### Stroke or Death after CEA for Symptomatic Patients by Year



Rates shown are observed rates among cases meeting inclusion criteria.

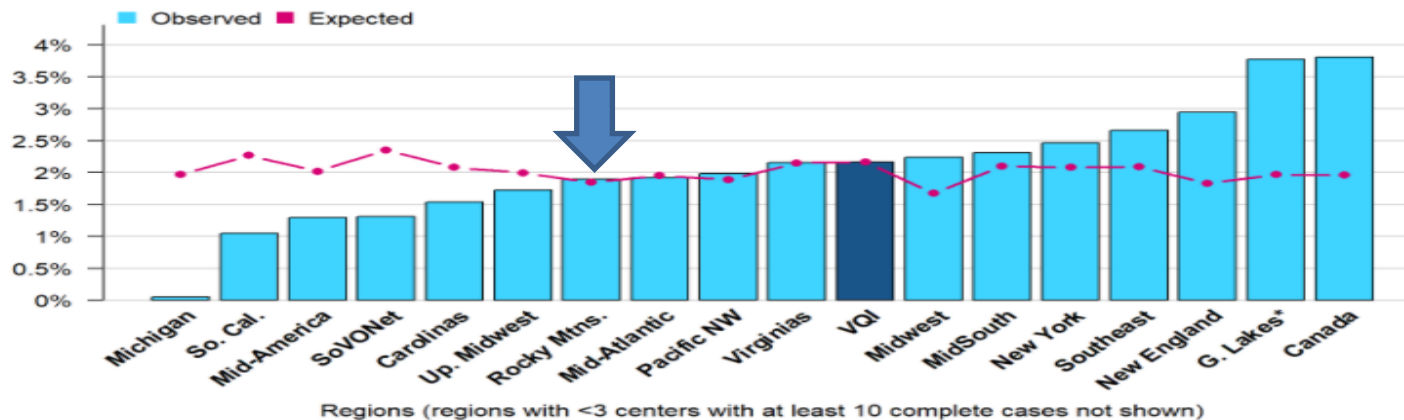
### Stroke or Death after CEA for Symptomatic Patients in Your Region (Jan-Dec 2021)



12 of 21 centers displayed

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

### Stroke or Death after CEA for Symptomatic Patients by Region Across VQI (Jan-Dec 2021)



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 January 1 and December 31, 2021

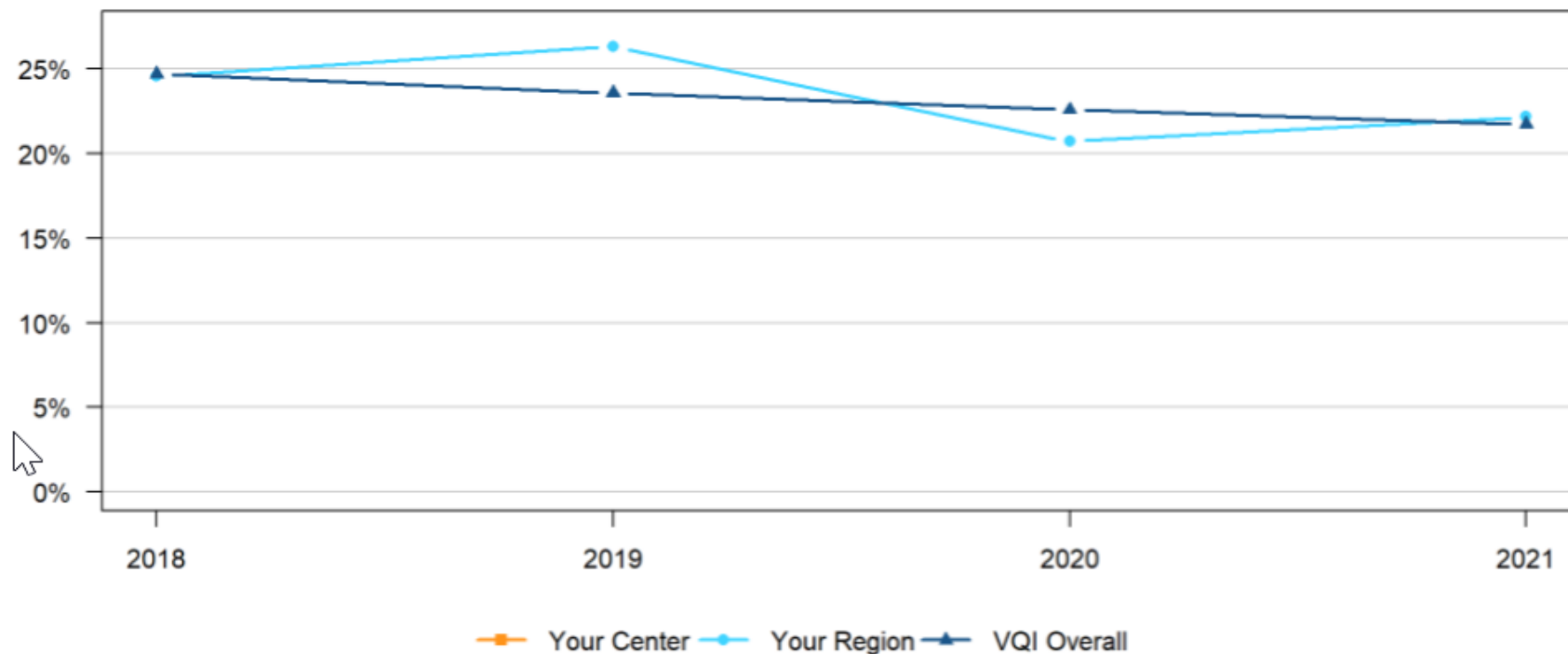
Includes Carotid Endarterectomy (CEA) procedures performed on asymptomatic patients. Asymptomatic patients are patients with no ipsilateral retinal or cortical TIA or stroke within 180 days prior to surgery. Excludes any patient with prior vertebrobasilar or non-specific TIA or stroke, prior ipsilateral 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 patients) meeting the inclusion criteria, and the observed and expected rates of postoperative LOS>1 Day for those cases.

	Your Center	Your Region	VQI Overall
Number of CEA procedures meeting inclusion criteria		397	10111
Observed rate of LOS>1 day among procedures meeting inclusion criteria		22.2%	21.7%
Number of procedures with complete data*		382	9628
Observed rate of LOS>1 day among cases with complete data		22.5%	21.6%
Expected rate of LOS>1 day among cases with complete data		20.7%	NA
P-value for comparison of observed and expected rates		0.38	NA

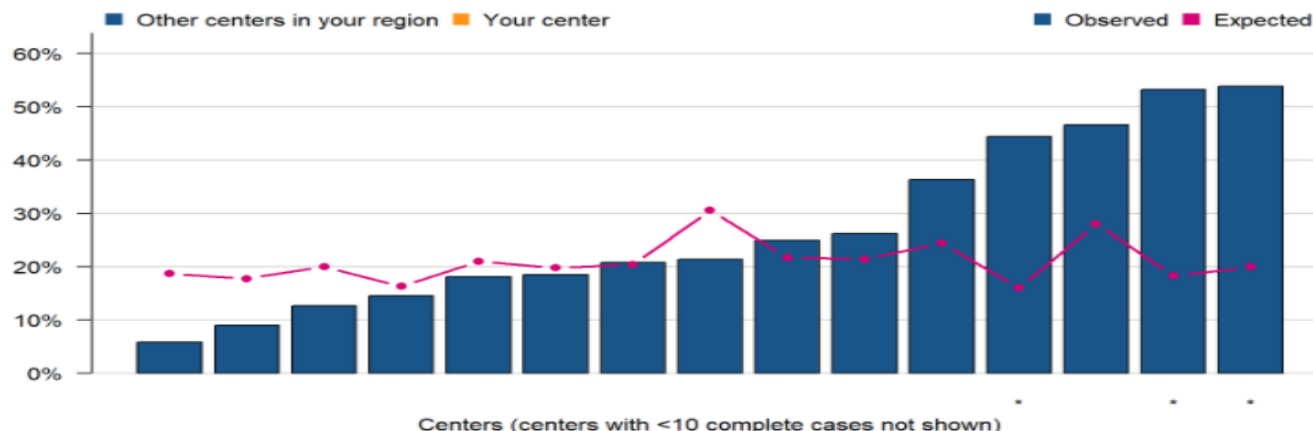
\*“Expected rate” is the rate estimated by a statistical model that accounts for patient characteristics, including age, gender, race, BMI, comorbidities, medication and stroke and vascular history. “Cases with complete data” include patients who have data on all of those factors.

### Postop LOS>1 Day after CEA for Asymptomatic Patients by Year



Rates shown are observed rates among cases meeting inclusion criteria.

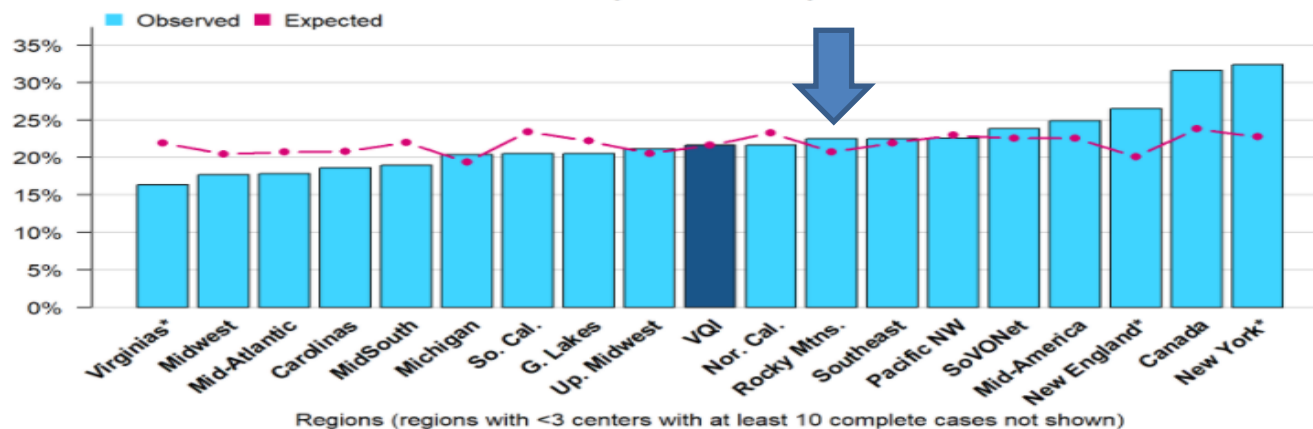
### Postop LOS>1 Day after CEA for Asymptomatic Patients in Your Region (Jan-Dec 2021)



15 of 22 centers displayed

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 Patients by Region Across VQI (Jan-Dec 2021)



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 January 1 and December 31, 2021

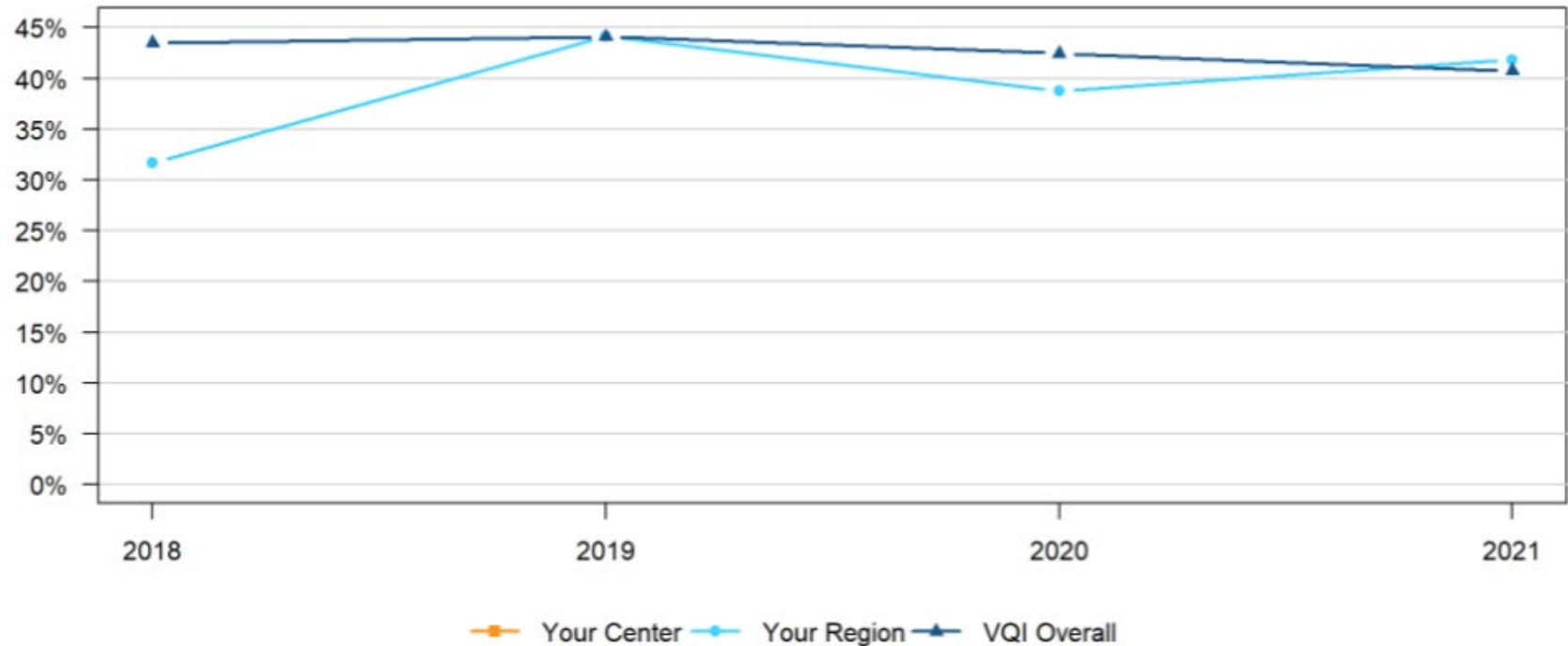
Includes Carotid Endarterectomy (CEA) procedures performed on symptomatic patients. Symptomatic patients are patients with an ipsilateral retinal or cortical TIA or stroke within 180 days prior to surgery. Excludes any patient with prior vertebrobasilar or non-specific TIA or stroke, prior ipsilateral 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 patients) meeting the inclusion criteria, and the observed and expected rates of postoperative LOS>1 Day for those cases.

	Your Center	Your Region	VQI Overall
Number of CEA procedures meeting inclusion criteria		275	5069
Observed rate of LOS>1 day among procedures meeting inclusion criteria		41.8%	40.8%
Number of procedures with complete data*		264	4888
Observed rate of LOS>1 day among cases with complete data		42%	40.9%
Expected rate of LOS>1 day among cases with complete data		38.9%	NA
P-value for comparison of observed and expected rates		0.31	NA

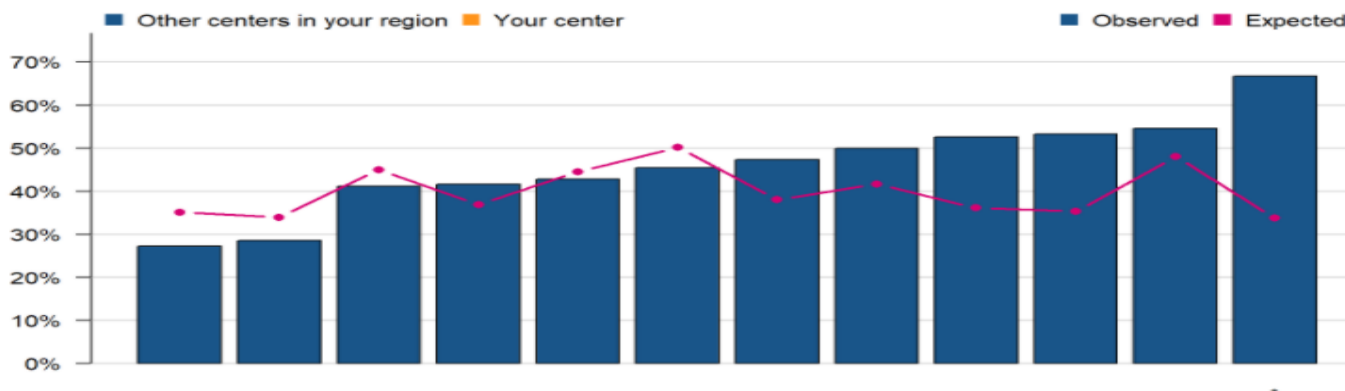
\*“Expected rate” is the rate estimated by a statistical model that accounts for patient characteristics, including age, gender, race, BMI, comorbidities, medication and stroke and vascular history. “Cases with complete data” include patients who have data on all of those factors.

### Postop LOS>1 Day after CEA for Symptomatic Patients by Year



Rates shown are observed rates among cases meeting inclusion criteria.

### Postop LOS>1 Day after CEA for Symptomatic Patients in Your Region (Jan-Dec 2021)

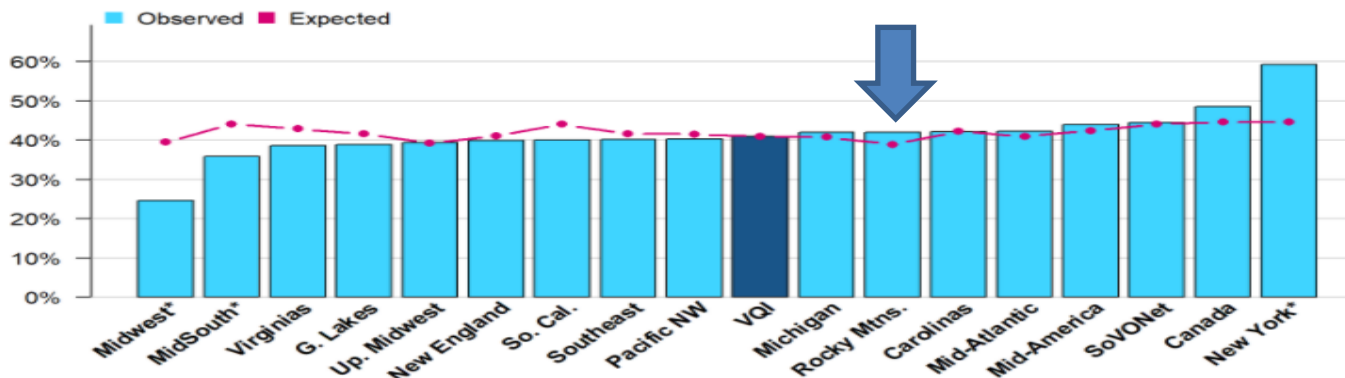


Centers (centers with <10 complete cases not shown)

12 of 21 centers displayed

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

### Postop LOS>1 Day after CEA for Symptomatic Patients by Region Across VQI (Jan-Dec 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

## EVAR: Postop LOS>2 Days

Procedures performed between January 1 and December 31, 2021

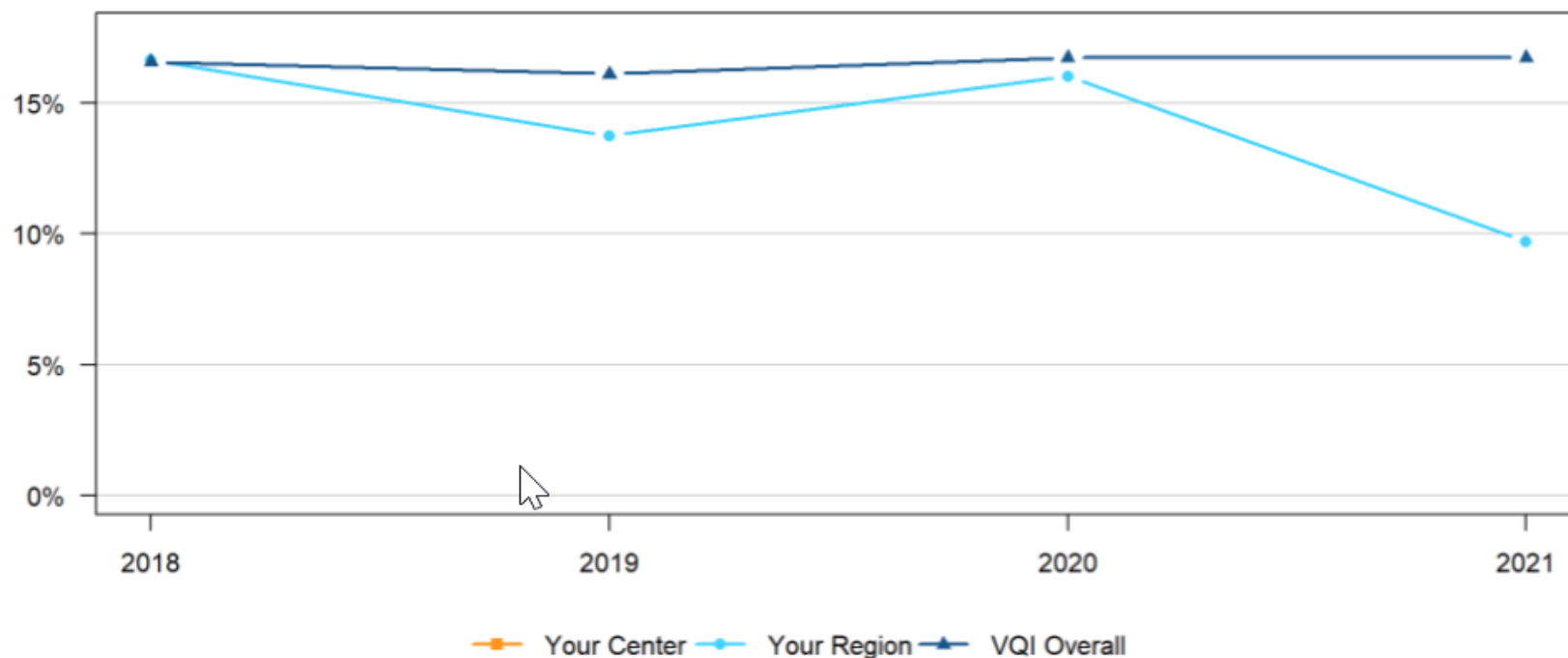
Includes Endovascular AAA Repair (EVAR) procedures. Excludes any procedure with ruptured aneurysm. Procedures where in-hospital death occurred with postoperative LOS≤2 days are also excluded. Postoperative LOS is based on the midnight rule used for hospital billing.

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.

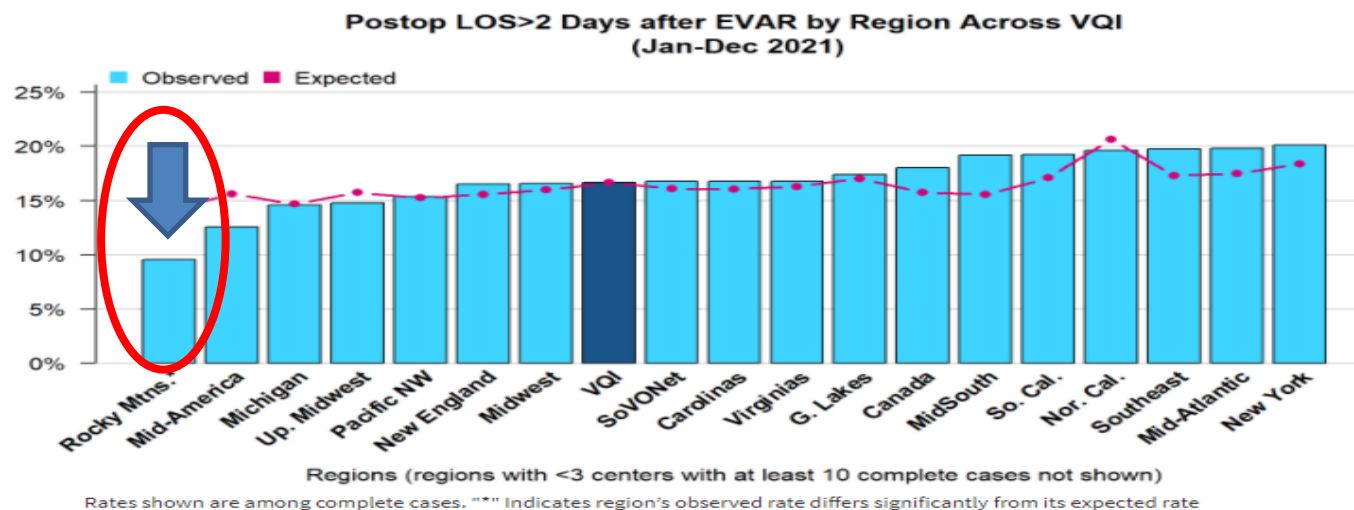
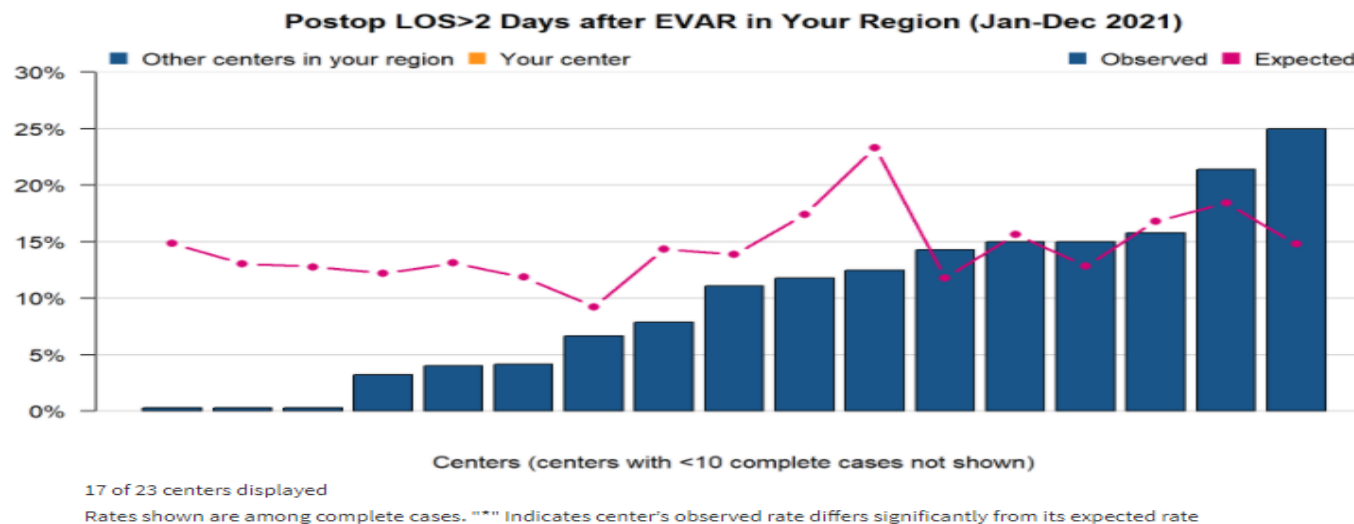
	Your Center	Your Region	VQI Overall
Number of EVAR procedures meeting inclusion criteria		485	7138
Observed rate of LOS>2 days among procedures meeting inclusion criteria		9.7%	16.7%
Number of procedures with complete data*		461	6628
Observed rate of LOS>2 days among cases with complete data		9.5%	16.7%
Expected rate of LOS>2 days among cases with complete data		14.1%	NA
P-value for comparison of observed and expected rates		0	NA

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

### Postop LOS>2 Days after EVAR by Year



Rates shown are observed rates among cases meeting inclusion criteria.



## EVAR: Sac Diameter Reporting

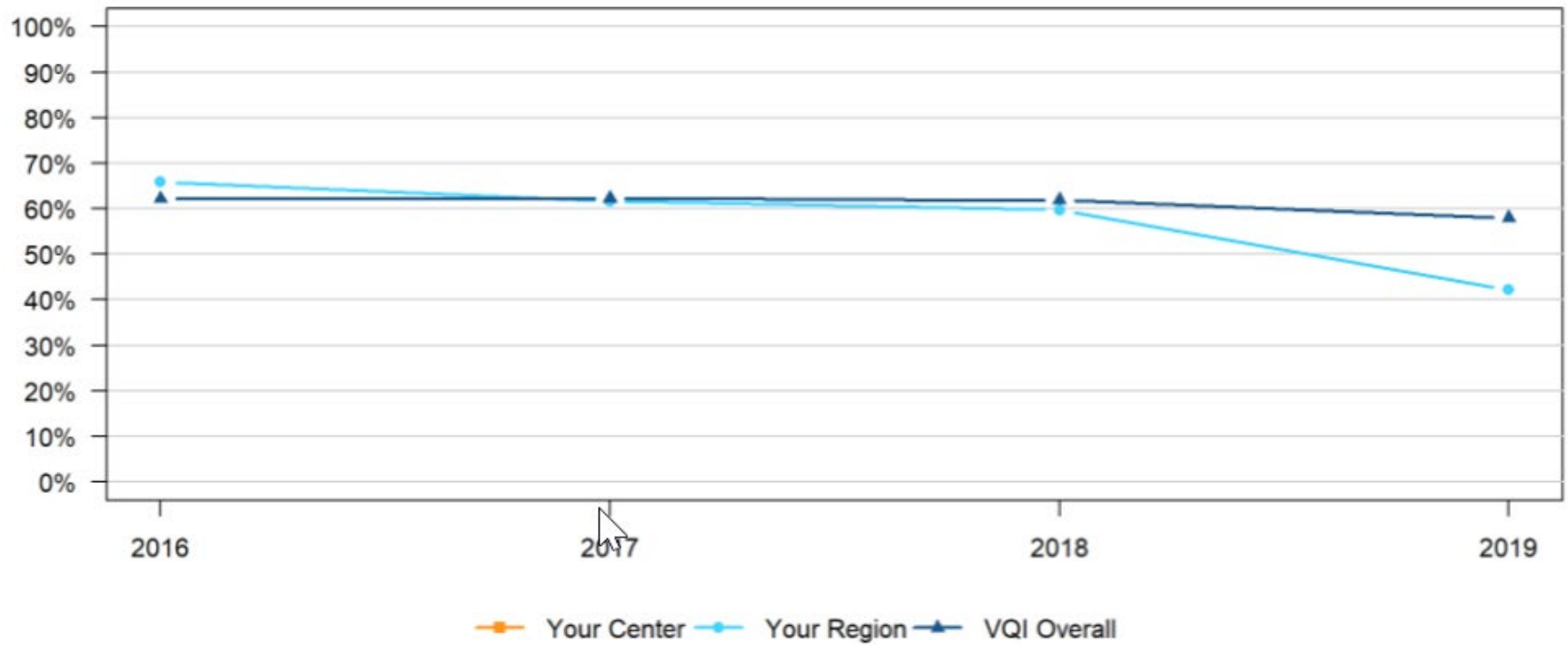
Procedures performed between January 1 and December 31, 2019

Includes Endovascular AAA Repair (EVAR) procedures. Excludes patients who were converted to open or died within 21 months of surgery.

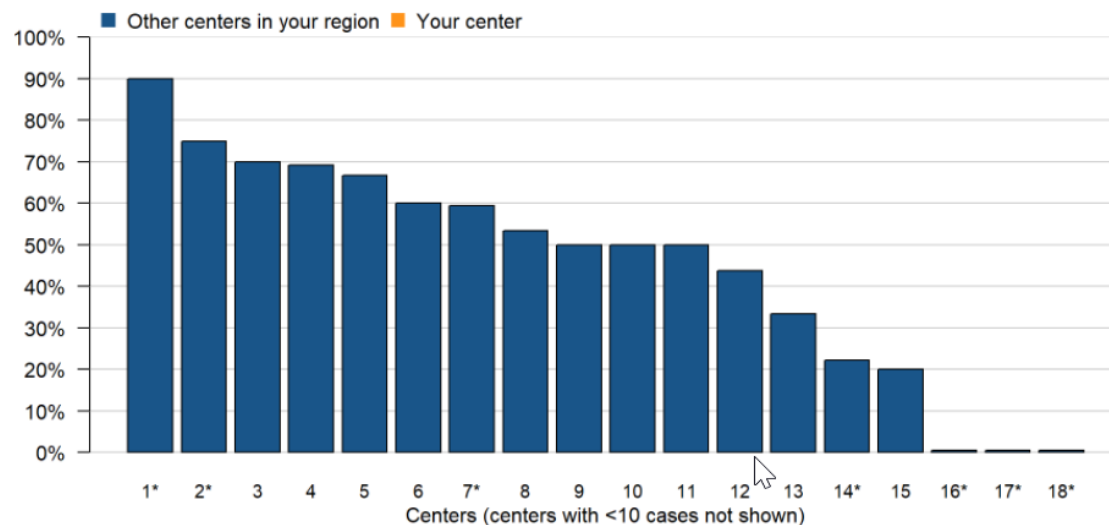
The table below gives the number of EVAR procedures meeting the inclusion criteria, and the percentage of those procedures where a sac diameter was reported between 9 and 21 months post-procedure.

	<b>Your Center</b>	<b>Your Region</b>	<b>VQI Overall</b>
Number of EVAR procedures meeting inclusion criteria		445	7112
Percentage with sac diameter reported between 9 and 21 months post-procedure		42.2%	58%

## EVAR Sac Diameter Reporting by Year



### EVAR Sac Diameter Reporting in Your Region (Jan-Dec 2019)



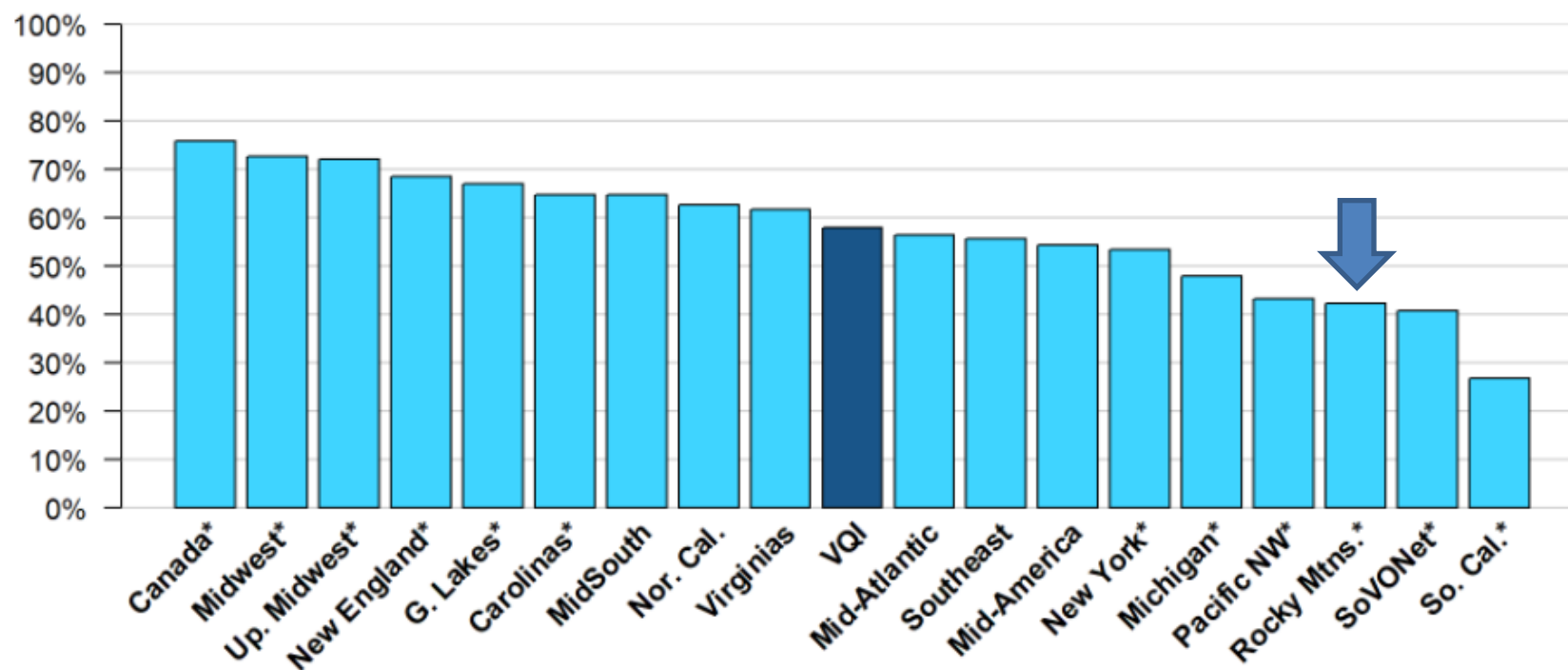
18 of 20 centers displayed

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

### EVAR Sac Diameter Reporting Unblinding Legend for Your Region

Index	Medical Center Name
1	St. Luke's Health System, Ltd.
2	Memorial Hospital Central
3	University of Arizona Medical Center
4	St. Vincent Healthcare
5	University of Utah Hospital and Clinics
6	St. Mary's Hospital
7	Saint Joseph Hospital
8	Mayo Clinic Arizona
9	University of New Mexico
10	Porter Adventist Hospital
11	Pima Vascular
12	Presbyterian/St. Luke's Medical Center
13	St. Anthony Lakewood
14	Tucson Medical Center
15	Rose Medical Center
16	NA
17	Lovelace Medical Center
18	Presbyterian Hospital

## EVAR Sac Diameter Reporting by Region Across VQI (Jan-Dec 2019)



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

"\*" Indicates region's rate differs significantly from the VQI rate.

## EVAR: SVS AAA Diameter Guideline

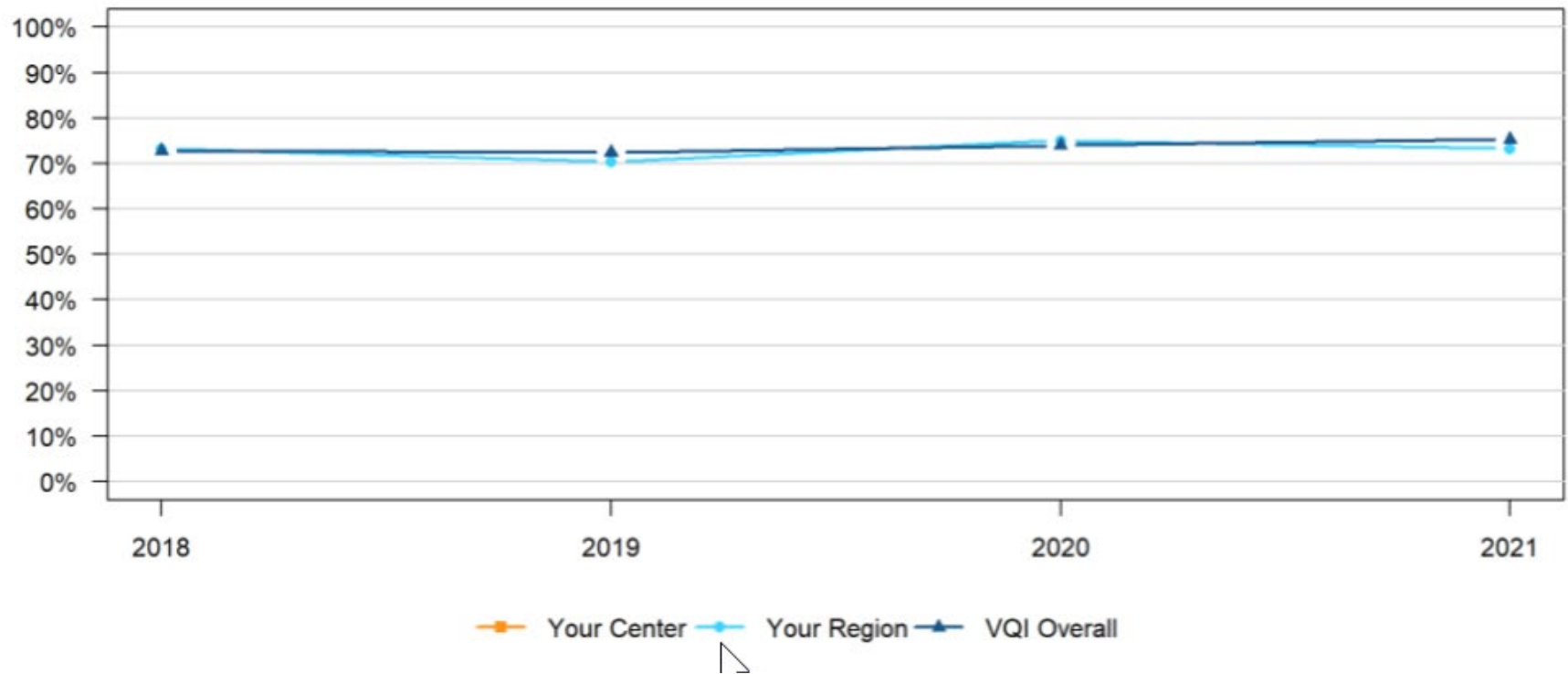
Procedures performed between January 1 and December 31, 2021

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

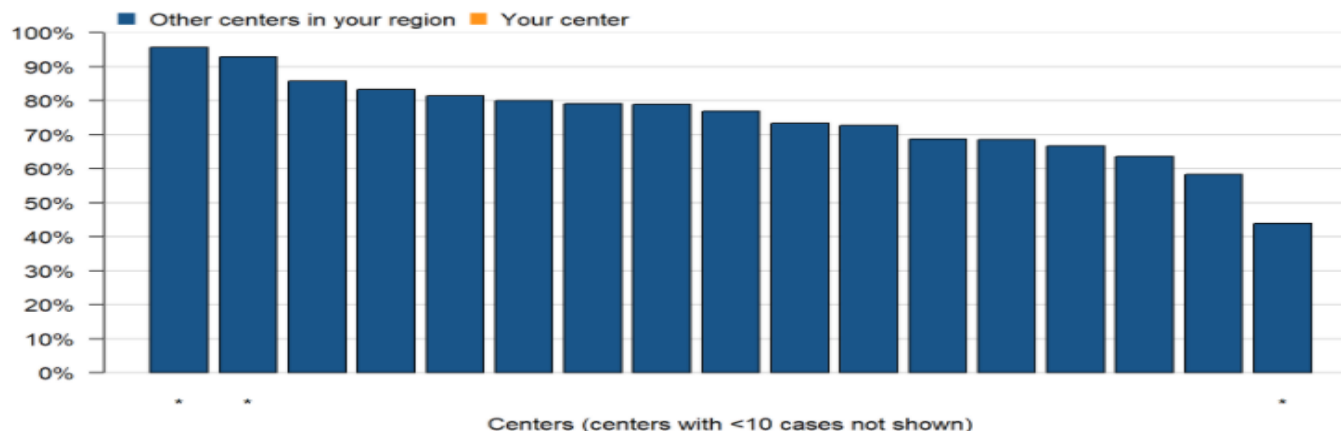
The table below gives the number of EVAR procedures meeting the inclusion criteria, and the percentage of those procedures meeting the SVS AAA diameter guideline.

	Your Center	Your Region	VQI Overall
Number of EVAR procedures meeting inclusion criteria		441	6335
Percentage meeting SVS AAA diameter guideline		73.2%	75.3%

### EVAR SVS AAA Diameter Guideline by Year



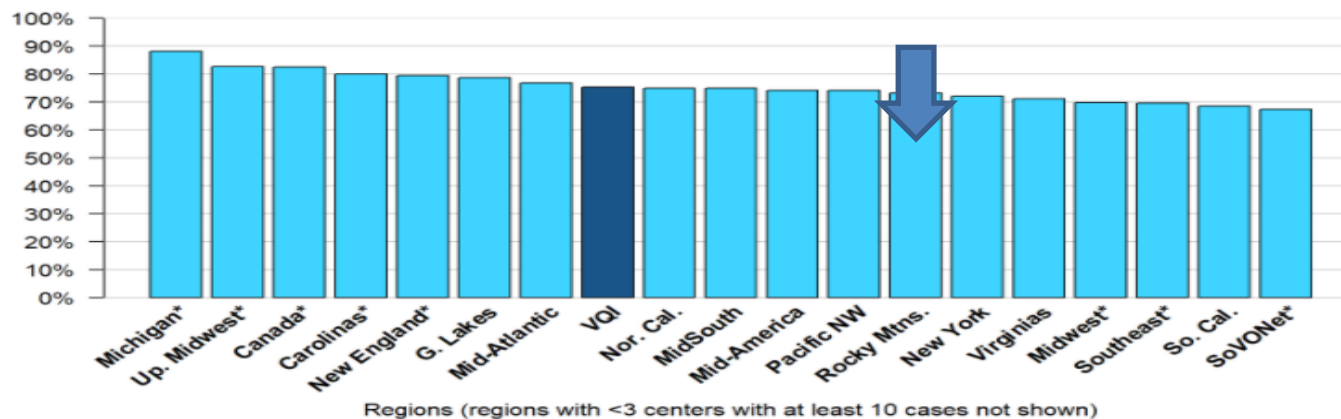
### EVAR SVS AAA Diameter Guideline in Your Region (Jan-Dec 2021)



17 of 23 centers displayed

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

### EVAR SVS AAA Diameter Guideline by Region Across VQI (Jan-Dec 2021)



\*\*\* Indicates region's rate differs significantly from the VQI rate.

## TEVAR: Sac Diameter Reporting

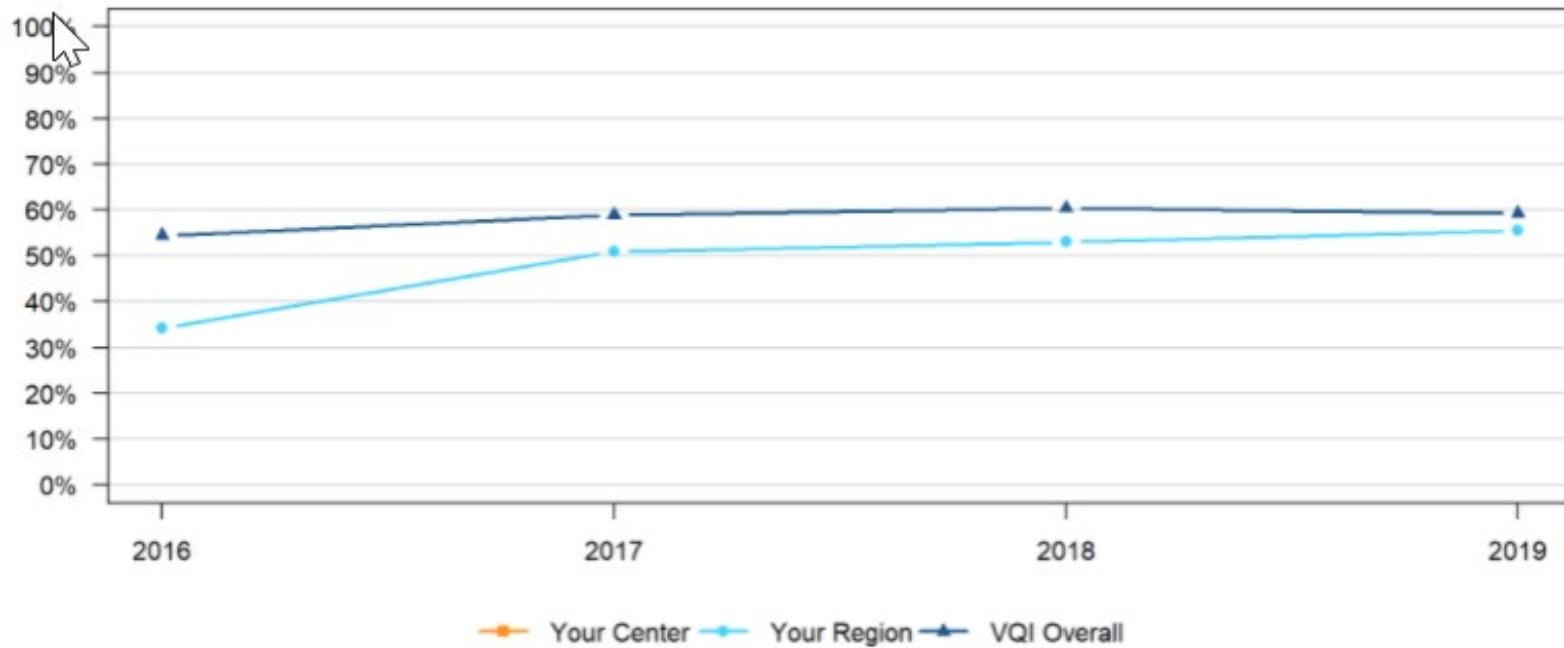
Procedures performed between January 1 and December 31, 2019

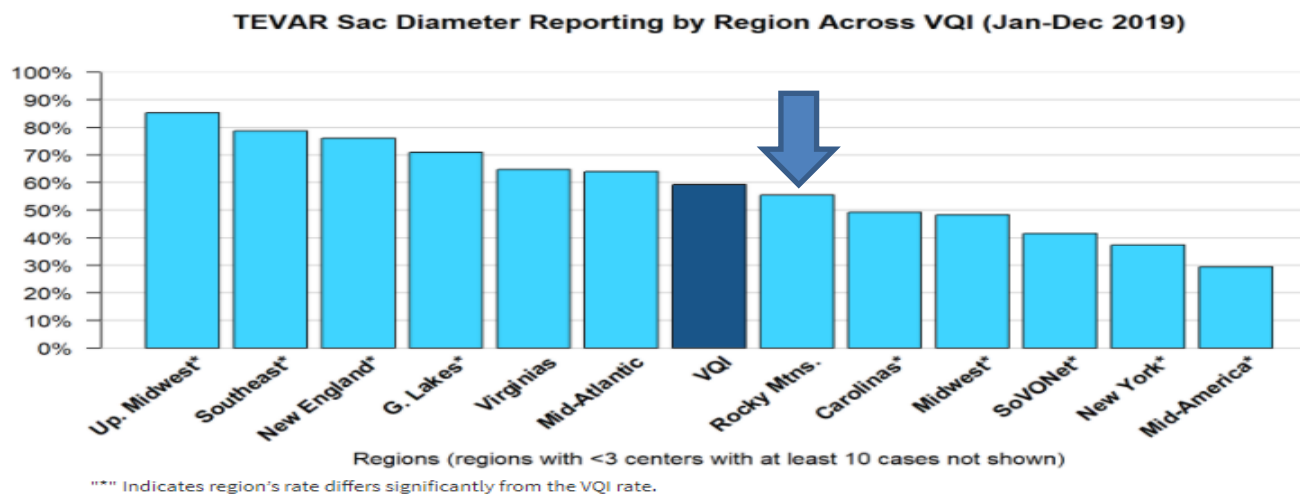
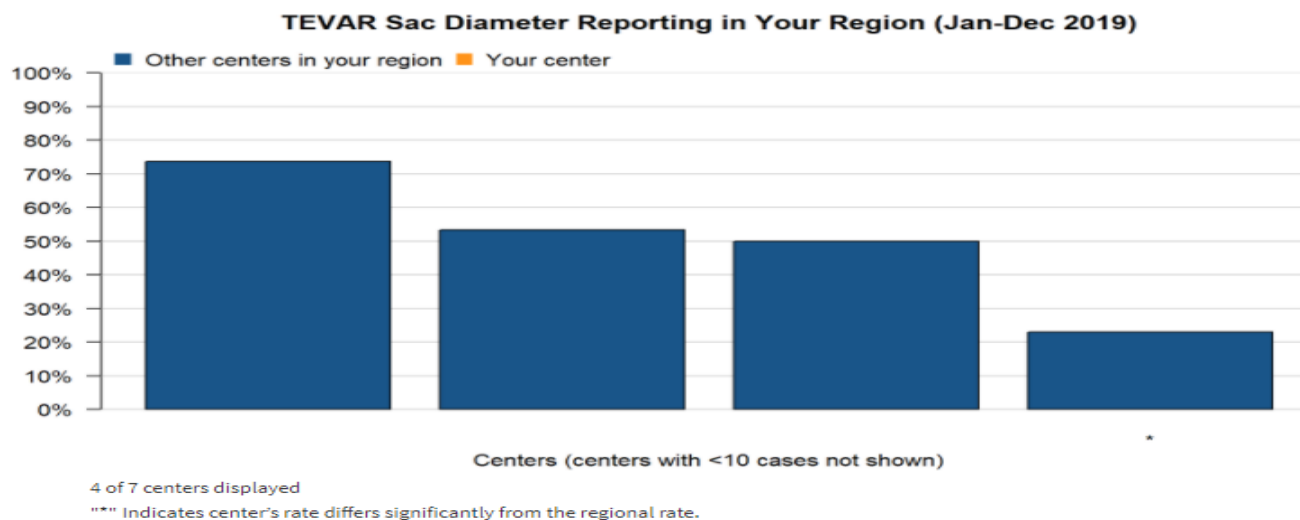
Includes Thoracic Endovascular Aortic Repair (TEVAR) procedures for aneurysm or aneurysm from dissection.  
Excludes procedures where no aortic device was implanted or patients who were converted to open or died within 21 months of surgery.

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

	Your Center	Your Region	VQI Overall
Number of TEVAR procedures meeting inclusion criteria		72	1703
Percentage with sac diameter reported between 9 and 21 months post-procedure		55.6%	59.3%

### TEVAR Sac Diameter Reporting by Year





## OAAA: In-Hospital Mortality

Procedures performed between January 1, 2018 and December 31, 2021

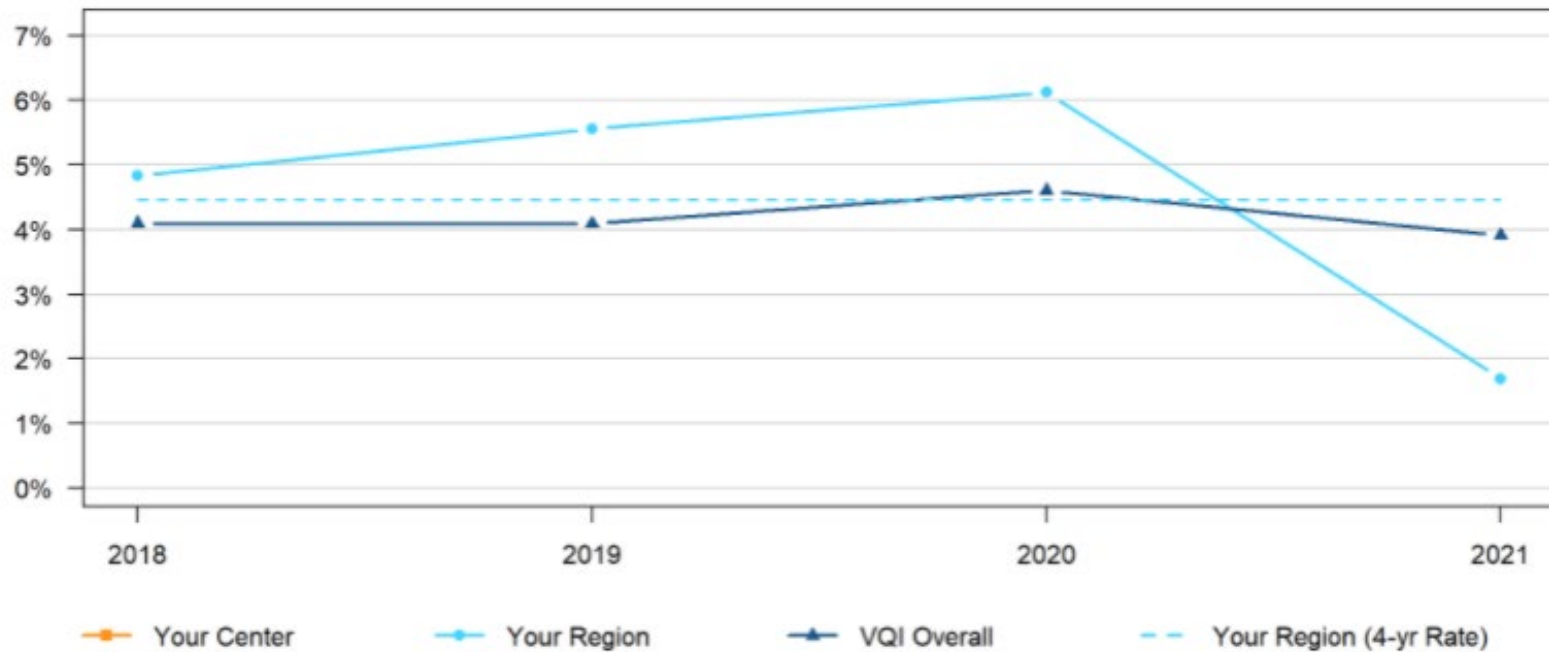
Includes Open AAA (OAAA) procedures. Excludes any patient with a ruptured aneurysm.

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.

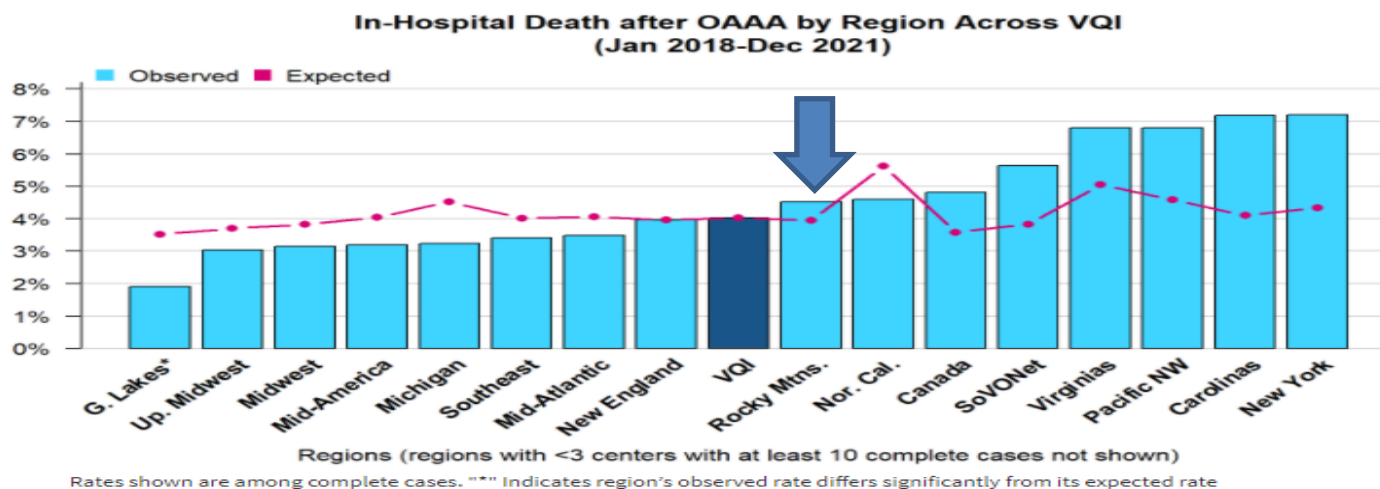
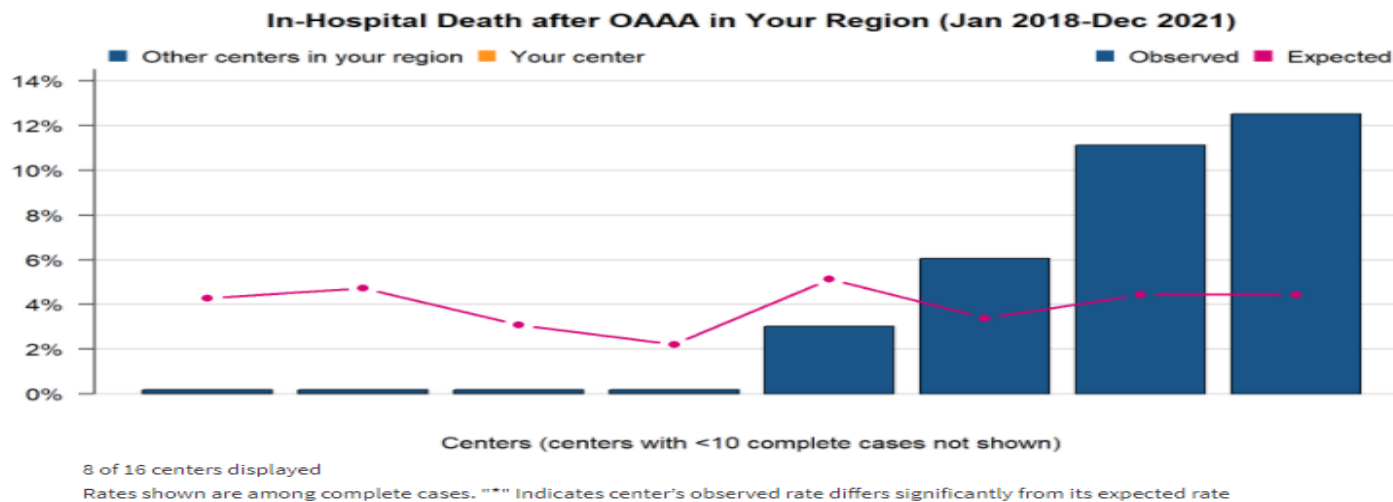
	Your Center	Your Region	VQI Overall
Number of OAAA procedures meeting inclusion criteria		224	4503
Observed rate of In-Hospital Mortality among procedures meeting inclusion criteria		4.5%	4.2%
Number of procedures with complete data*		221	4201
Observed rate of In-Hospital Mortality among cases with complete data		4.5%	4%
Expected rate of In-Hospital Mortality among cases with complete data		3.9%	NA
P-value for comparison of observed and expected rates		0.6	NA

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

### In-Hospital Death after OAAA by Year



Rates shown are observed rates among cases meeting inclusion criteria.





## OAAA: SVS Cell-Saver Guideline

Procedures performed between January 1, 2018 and December 31, 2021

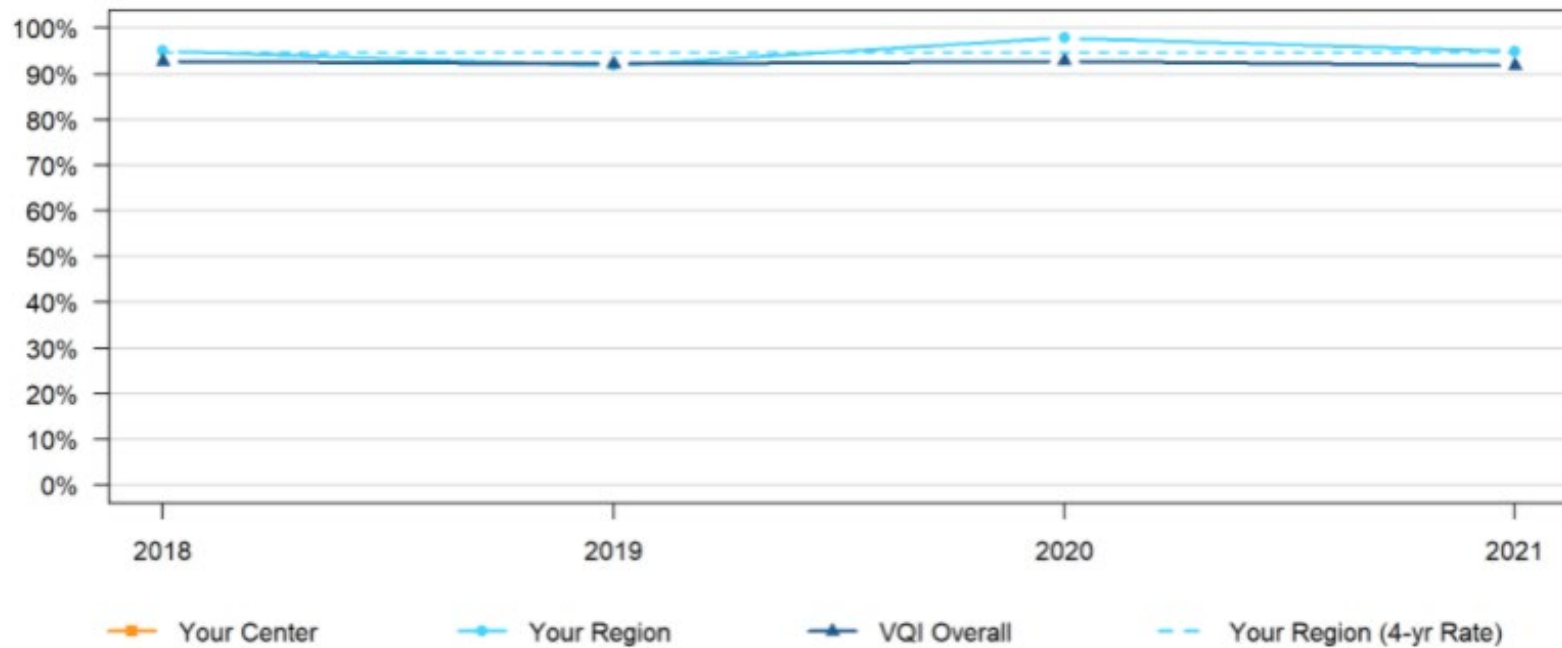
Includes Open AAA (OAAA) procedures. Excludes any patient with EBL≤500 ml. SVS cell-saver guideline is met if cell salvage or ultrafiltration device was used.

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.

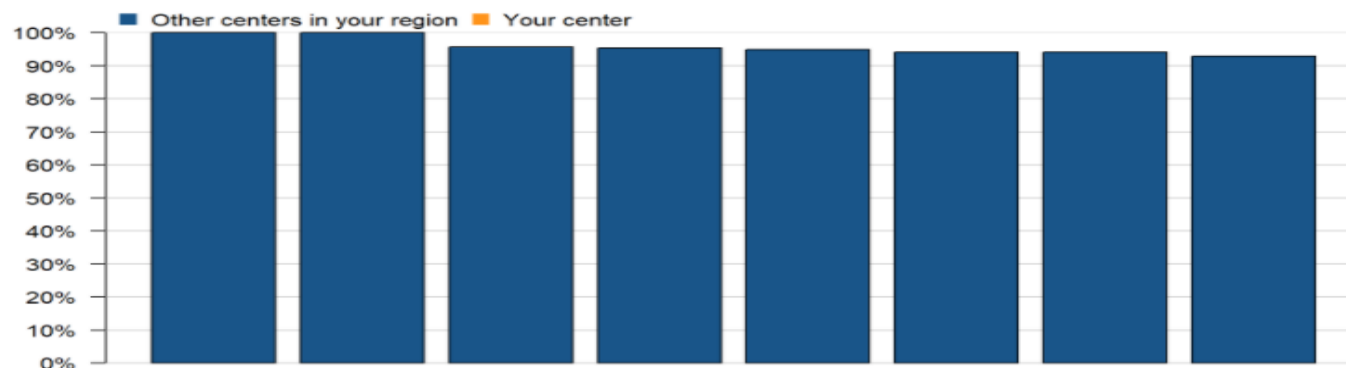
	Your Center	Your Region	VQI Overall
Number of OAAA procedures meeting inclusion criteria		228	4576
Percentage meeting SVS cell-saver guideline		94.7%	92.4%



### OAAA Cell-Saver Guideline by Year



### OAAA Cell-Saver Guideline in Your Region (Jan 2018-Dec 2021)

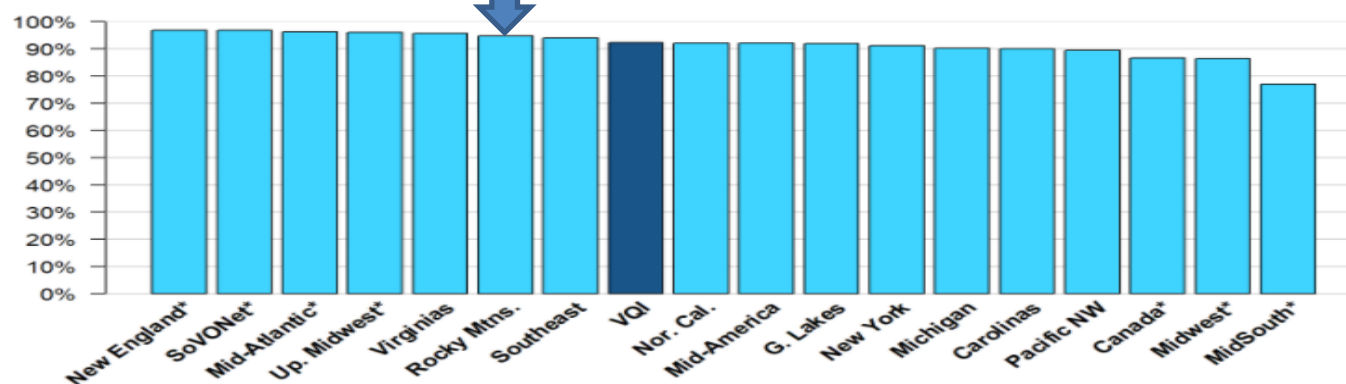


Centers (centers with <10 cases not shown)

8 of 16 centers displayed

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

### OAAA Cell-Saver Guideline by Region Across VQI (Jan 2018-Dec 2021)



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

\*\*\* Indicates region's rate differs significantly from the VQI rate.

## OAAA: SVS Iliac Inflow Guideline

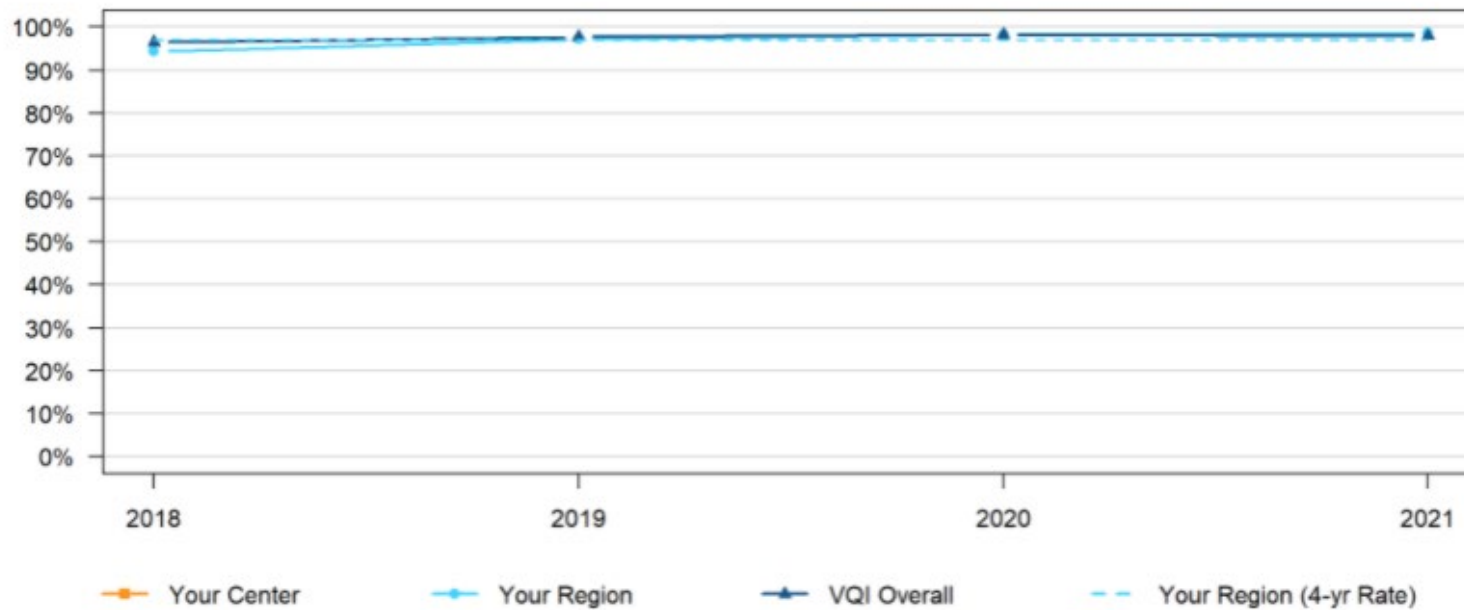
Procedures performed between January 1, 2018 and December 31, 2021

Includes Open AAA (OAAA) procedures. SVS iliac inflow guideline is met if preservation of flow was maintained to at least one internal iliac artery.

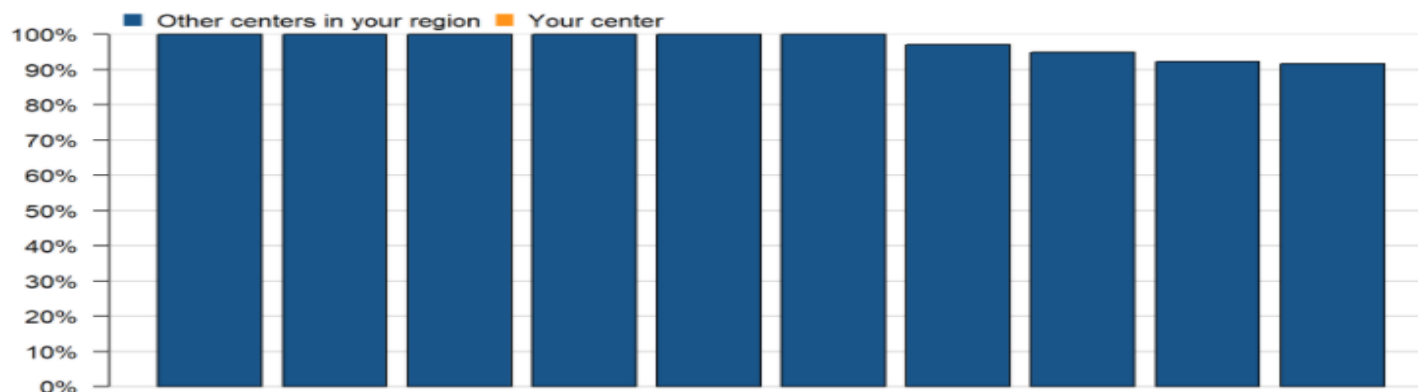
The table below gives the number of OAAA procedures meeting the inclusion criteria, and the percentage of those procedures meeting the SVS iliac inflow guideline.

	Your Center	Your Region	VQI Overall
Number of OAAA procedures meeting inclusion criteria		273	5134
Percentage meeting SVS iliac inflow guideline		97.1%	97.6%

### OAAA Iliac Inflow Guideline by Year



### OAAA Iliac Inflow Guideline in Your Region (Jan 2018-Dec 2021)

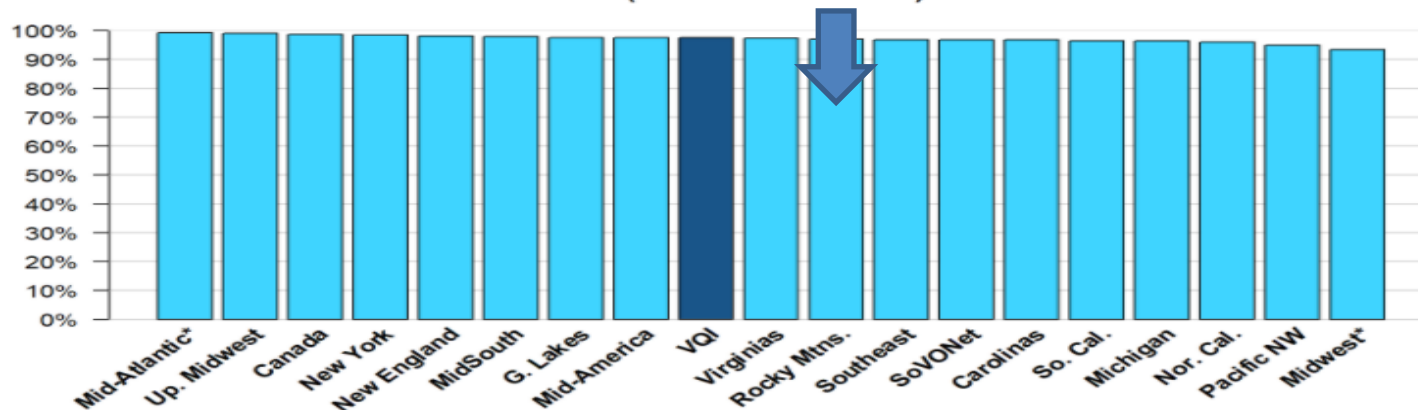


Centers (centers with <10 cases not shown)

10 of 16 centers displayed

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

### OAAA Iliac Inflow Guideline by Region Across VQI (Jan 2018-Dec 2021)



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

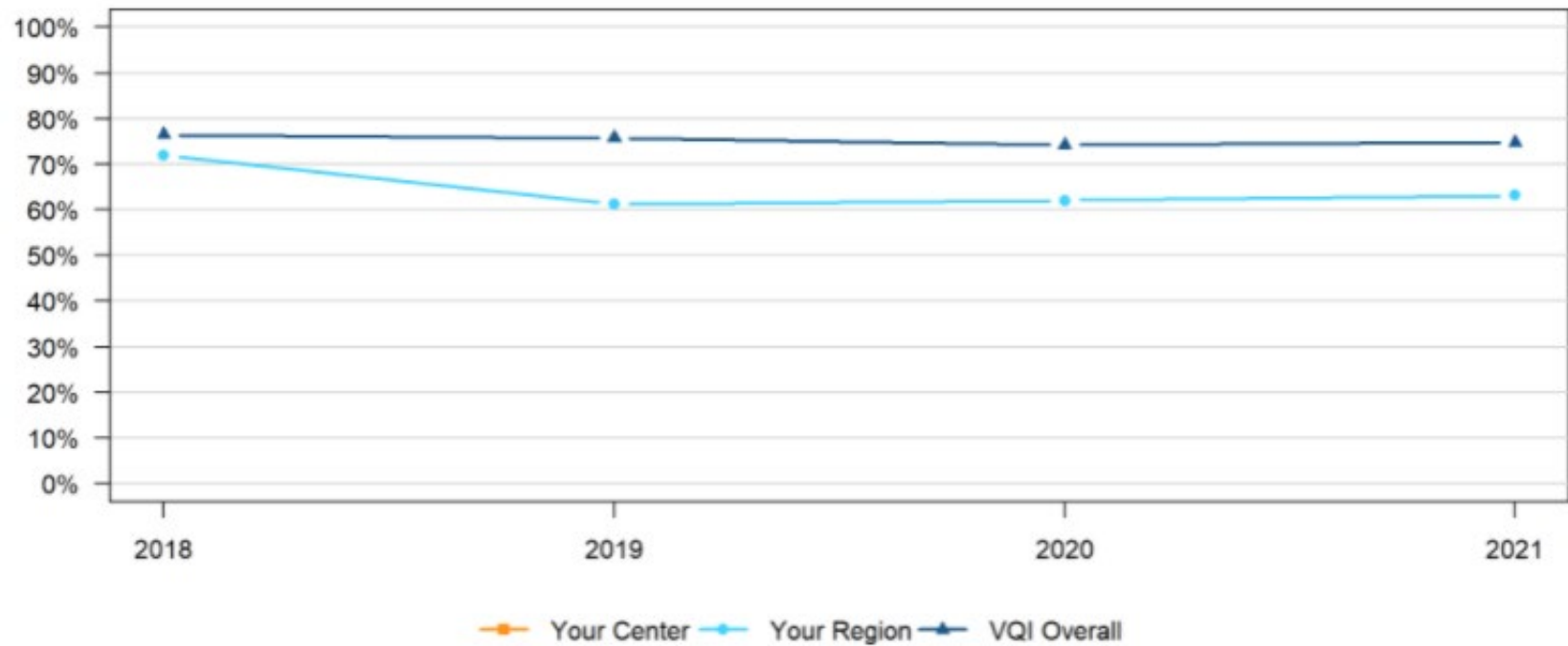
Procedures performed between January 1 and December 31, 2021

Includes Peripheral Vascular Intervention (PVI) procedures for mild, moderate, or severe claudication. “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.

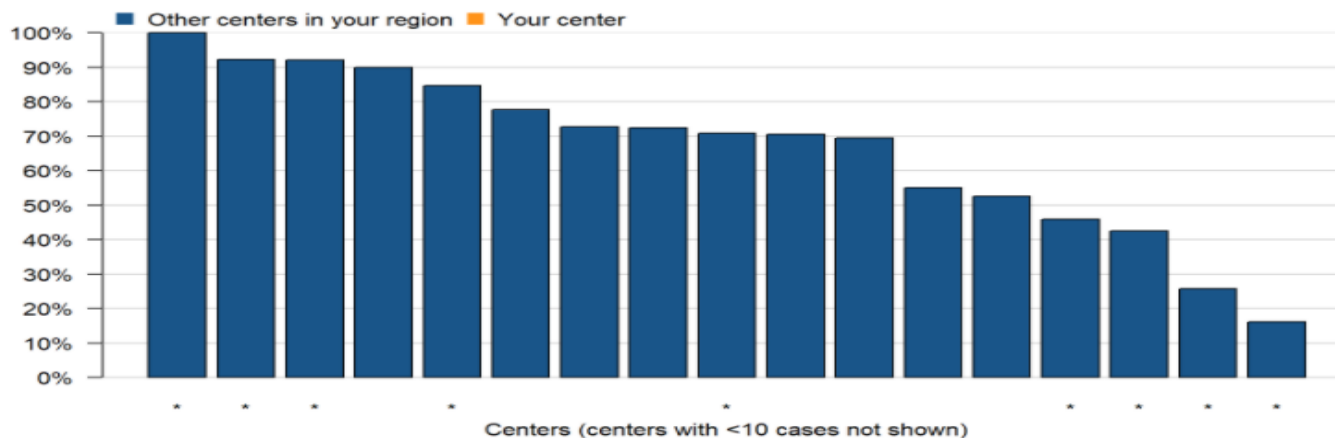
The table below gives the number of PVI procedures meeting the inclusion criteria, and the percentage of those procedures in which an ABI or toe pressure was assessed prior to PVI.

	Your Center	Your Region	VQI Overall
Number of PVI procedures meeting inclusion criteria		863	14657
Percentage with ABI/toe pressure assessment		63.2%	74.8%

### ABI/Toe Pressure Assessment before PVI for Claudication by Year



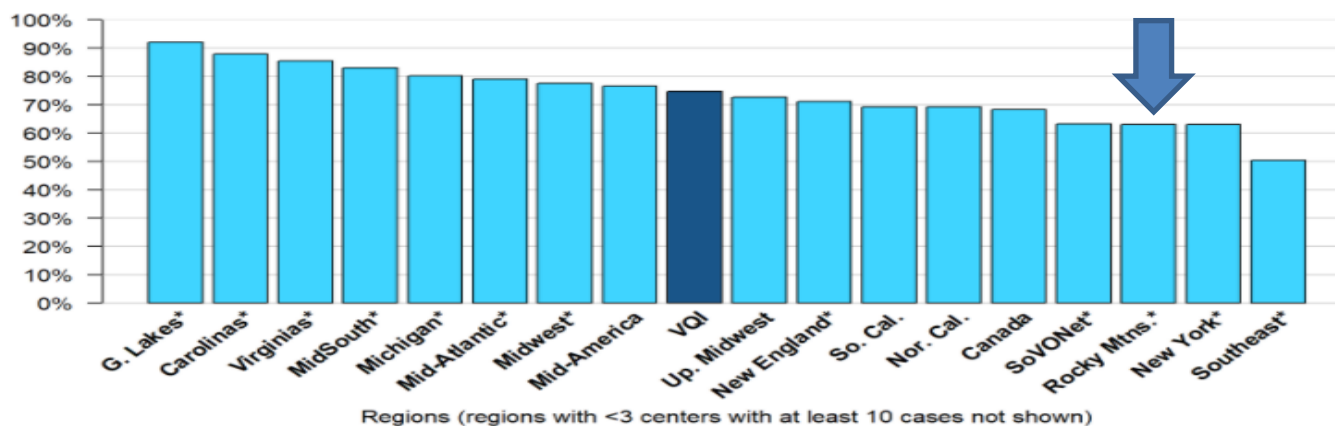
### ABI/Toe Pressure Assessment before PVI for Claudication in Your Region (Jan-Dec 2021)



17 of 21 centers displayed

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

### ABI/Toe Pressure Assessment before PVI for Claudication by Region Across VQI (Jan-Dec 2021)



\*\*\* Indicates region's rate differs significantly from the VQI rate.

## INFRA CLTI: Major Complications

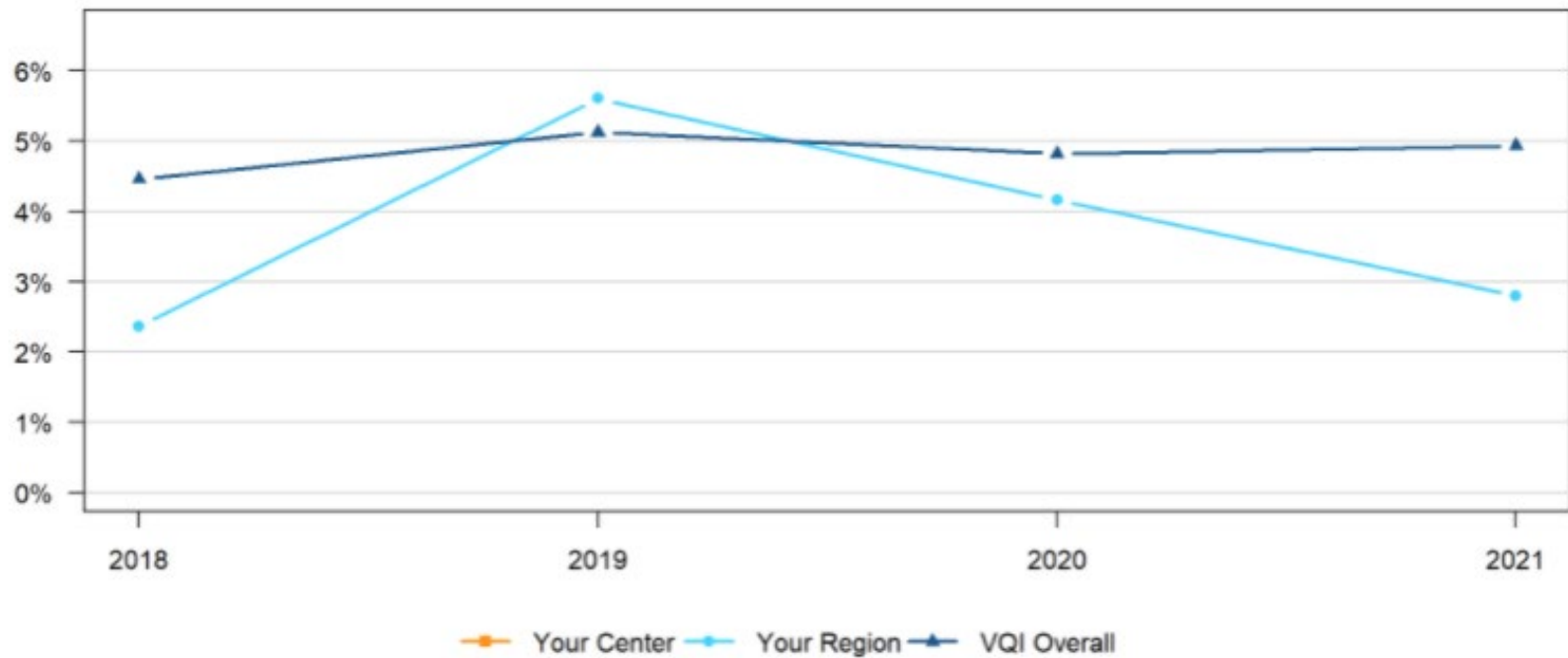
Procedures performed between January 1 and December 31, 2021

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

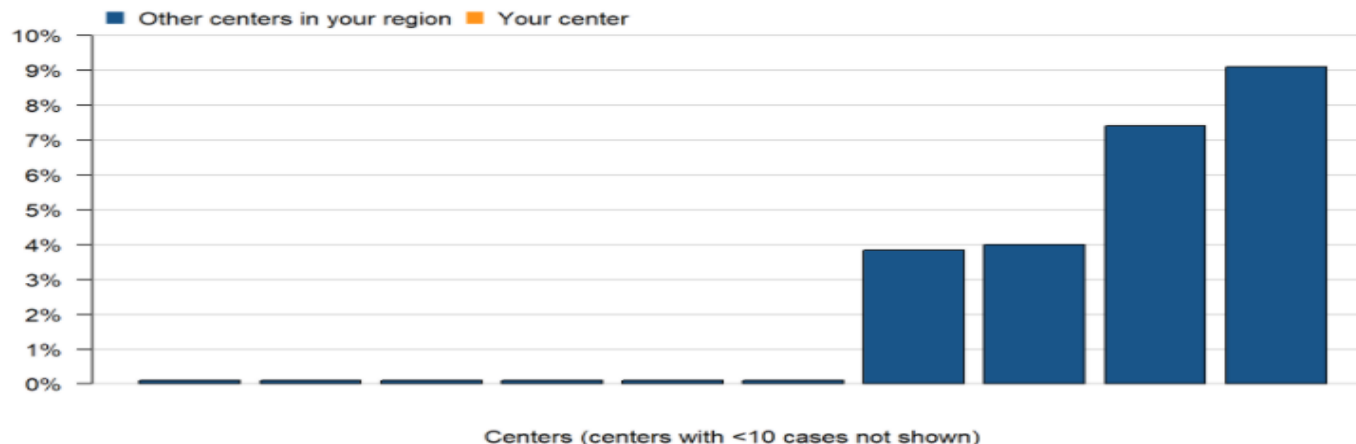
The table below gives the number of INFRA procedures meeting the inclusion criteria, and the percentage of those procedures that resulted in in-hospital death, ipsilateral BK or AK amputation, or graft occlusion.

	Your Center	Your Region	VQI Overall
Number of INFRA procedures meeting inclusion criteria		250	5187
Percentage with major complications		2.8%	4.9%

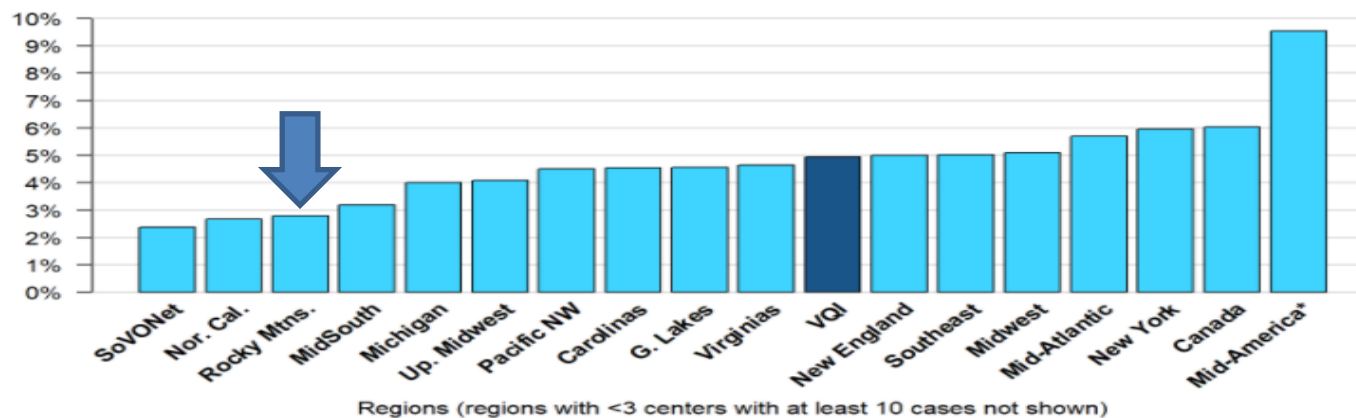
### Major Complications after INFRA for CLTI by Year



### Major Complications after INFRA for CLTI in Your Region (Jan-Dec 2021)



### Major Complications after INFRA for CLTI by Region Across VQI (Jan-Dec 2021)



## SUPRA CLTI: Major Complications

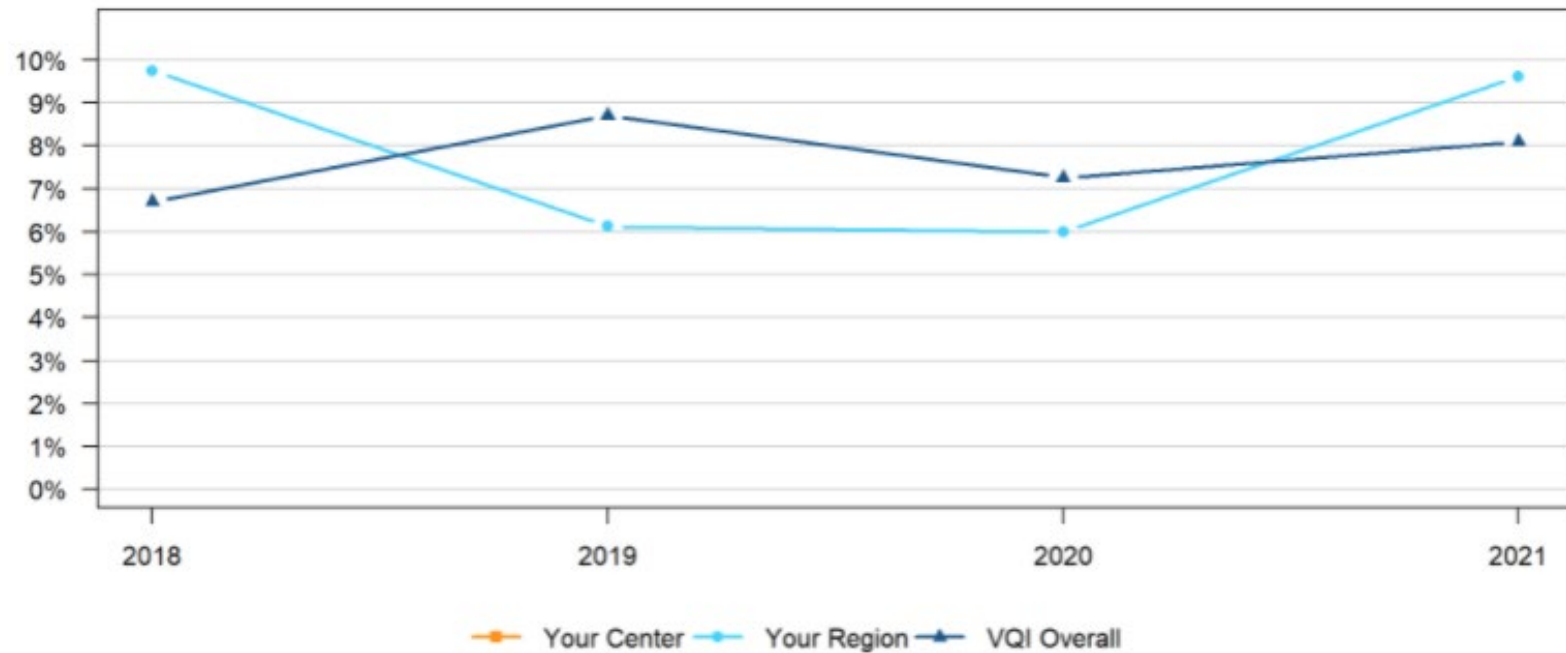
Procedures performed between January 1 and December 31, 2021

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

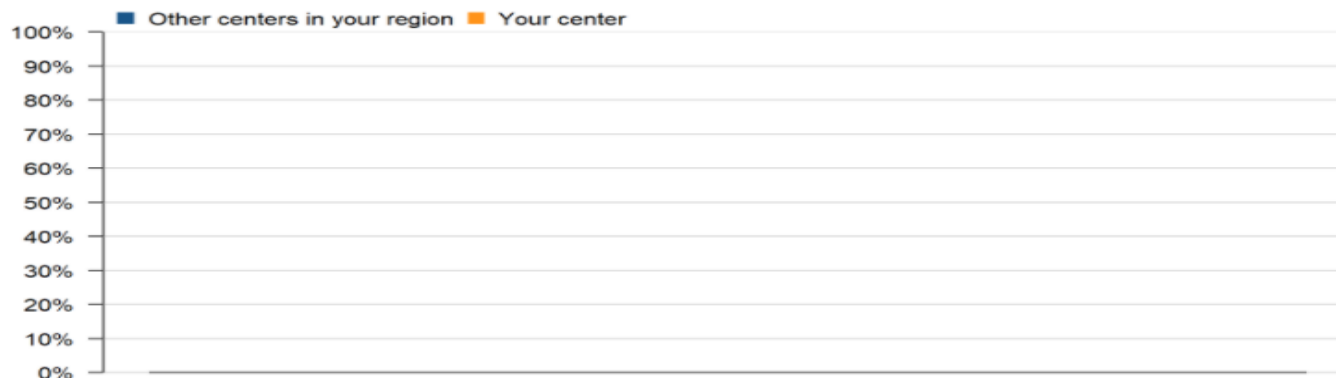
The table below gives the number of SUPRA procedures meeting the inclusion criteria, and the percentage of those procedures that resulted in in-hospital death, ipsilateral BK or AK amputation, or graft occlusion.

	Your Center	Your Region	VQI Overall
Number of SUPRA procedures meeting inclusion criteria		52	1162
Percentage with major complications		9.6%	8.1%

### Major Complications after SUPRA for CLTI by Year

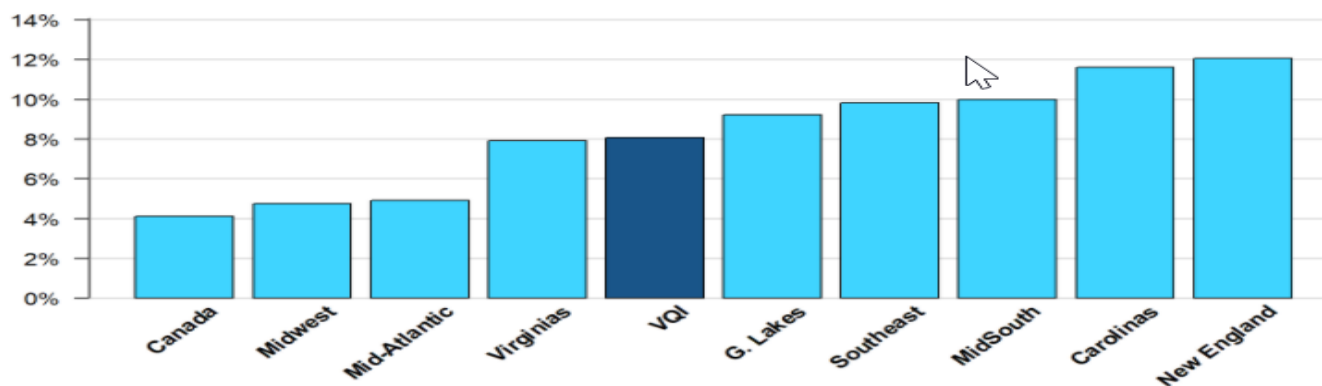


### Major Complications after SUPRA for CLTI in Your Region (Jan-Dec 2021)



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

### Major Complications after SUPRA for CLTI by Region Across VQI (Jan-Dec 2021)



\*\*\* Indicates region's rate differs significantly from the VQI rate.

## LEAMP: Postop Complications

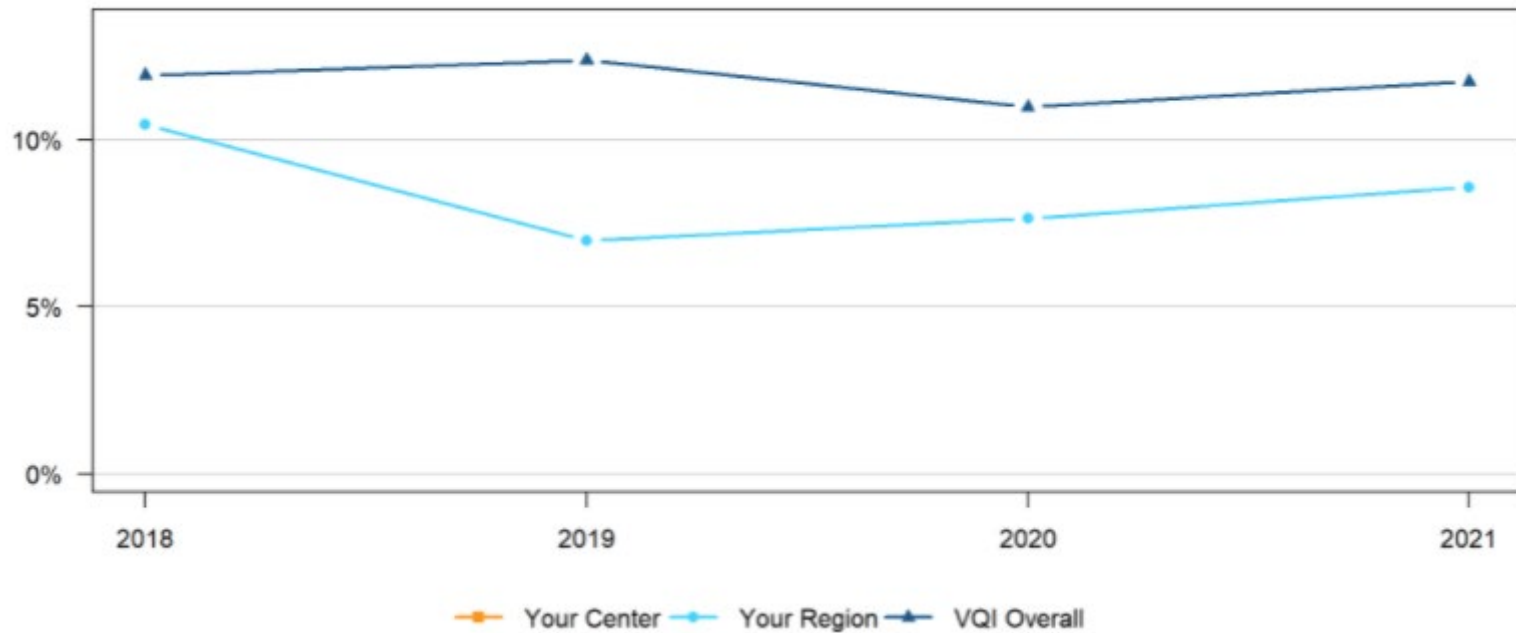
Procedures performed between January 1 and December 31, 2021

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

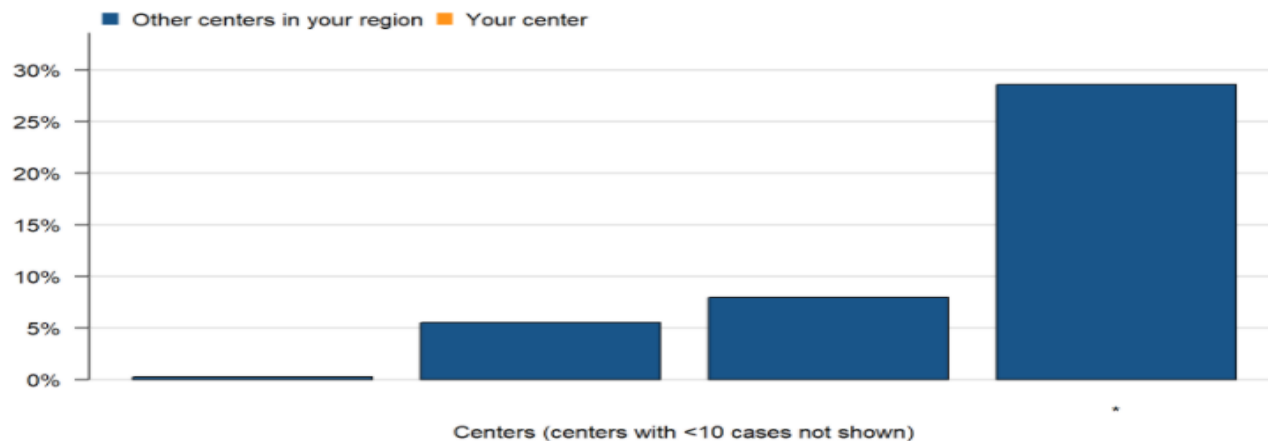
The table below gives the number of LEAMP procedures meeting the inclusion criteria, and the percentage of those procedures that resulted in a postoperative complication.

	Your Center	Your Region	VQI Overall
Number of LEAMP procedures meeting inclusion criteria		105	3080
Percentage with postoperative complications		8.6%	11.7%

Postop Complications after LEAMP by Year



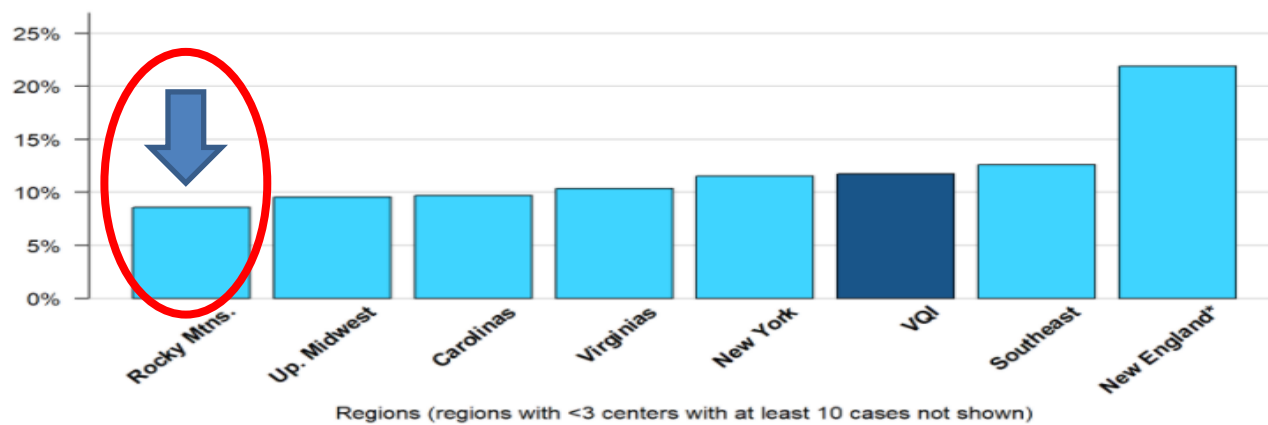
### Postop Complications after LEAMP in Your Region (Jan-Dec 2021)



4 of 4 centers displayed

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

### Postop Complications after LEAMP by Region Across VQI (Jan-Dec 2021)



\*\*\* Indicates region's rate differs significantly from the VQI rate.

## HDA: Primary AVF vs. Graft

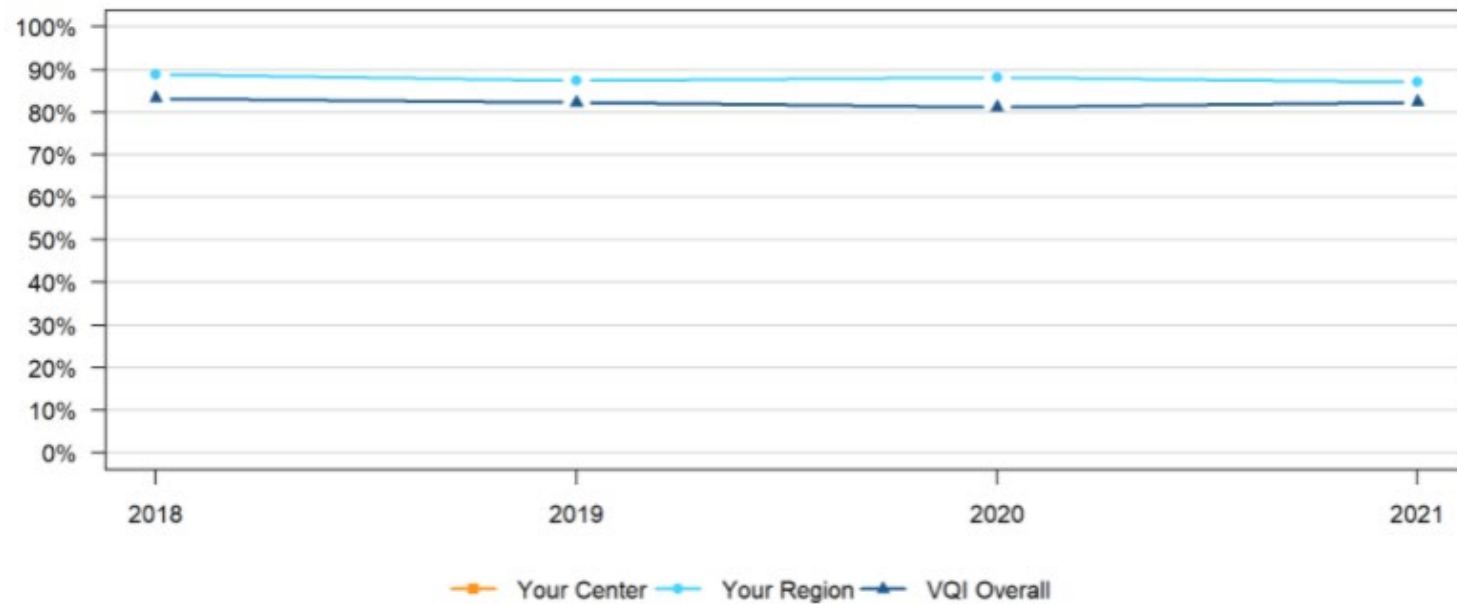
Procedures performed between January 1 and December 31, 2021

Includes Hemodialysis Access (HDA) procedures. Excludes procedures where Access Type = Endo AVF or patients with a previous access procedure in the same arm.

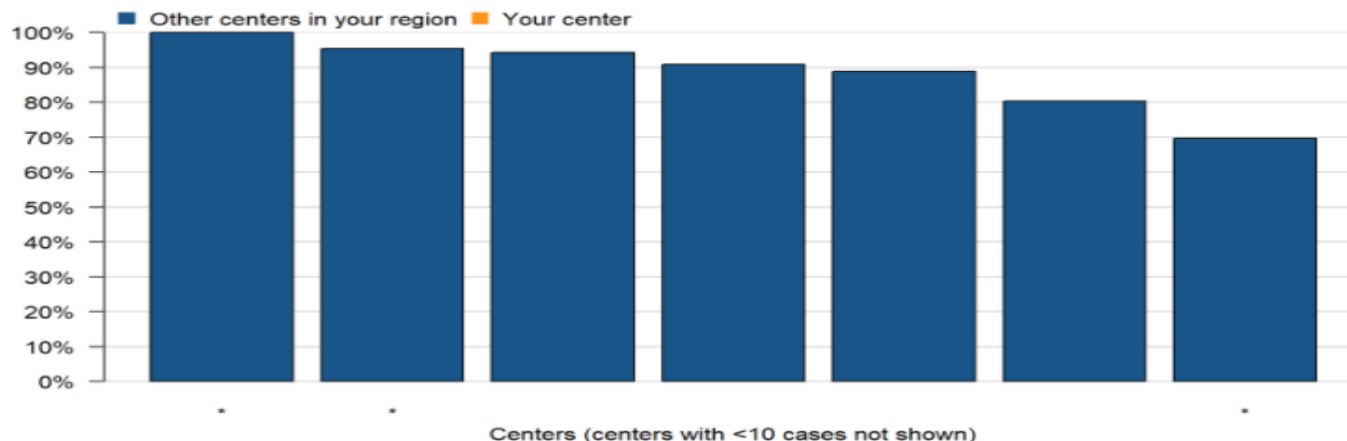
The table below gives the number of HDA procedures meeting the inclusion criteria, and the percentage of those procedures that were primary AVF.

	Your Center	Your Region	VQI Overall
Number of HDA procedures meeting inclusion criteria		340	4829
Percentage with primary AVF		87.1%	82.4%

**Primary AVF Access by Year**



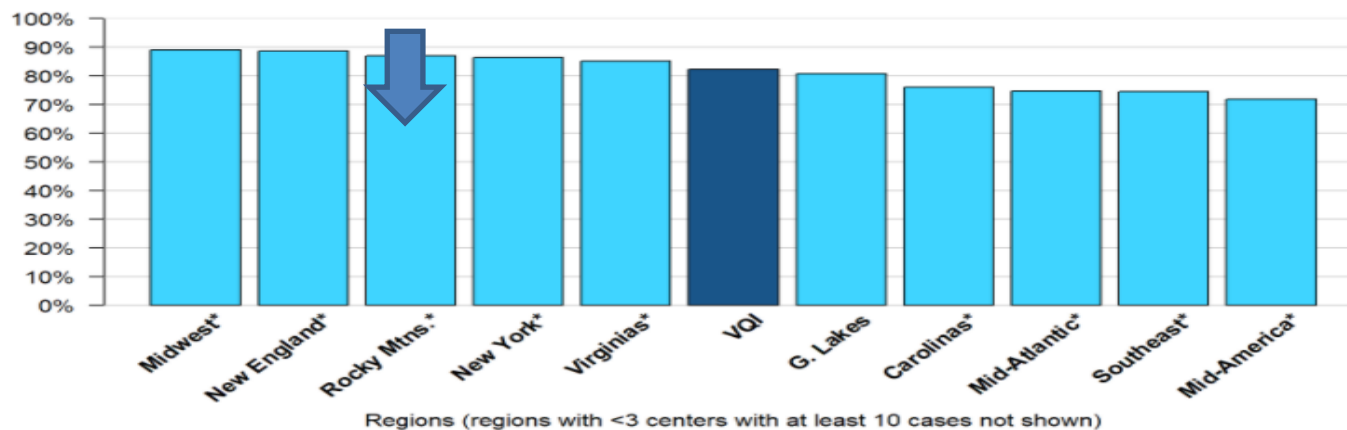
### Primary AVF Access in Your Region (Jan-Dec 2021)



7 of 8 centers displayed

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

### Primary AVF Access by Region Across VQI (Jan-Dec 2021)



\*\*\* Indicates region's rate differs significantly from the VQI rate.

**Scott Berman, MD**

**Tze-Woei Tan, MD**

- Brainstorming for new Regional Quality Improvement Projects
  - LTFU Improvement
  - Resistance to Plavix in TCAR Patients



# National VQI Update

Caroline Morgan, BSN  
Clinical Operations



# What is a PSO

PSO = Patient Safety Organization

- Created under authorization of the Patient Safety and Quality Improvement Act of 2005 (PSQIA)
- Goal – Improve quality & safety of health care delivery
- PSQIA encourages voluntary reporting & sharing of patient safety information without fear of legal discovery

- Protects comparative data from discovery
- Eliminates need for informed patient consent & IRB approval for core registry participation
- Allows patient identifiers to be included for internal purposes
- Only de-identified data can be released
  - Benchmarking, risk adjustment and merging with other identified data sets done within the PSO
  - QI research requires approval of PSO RAC committee; analytic data sets are de-identified



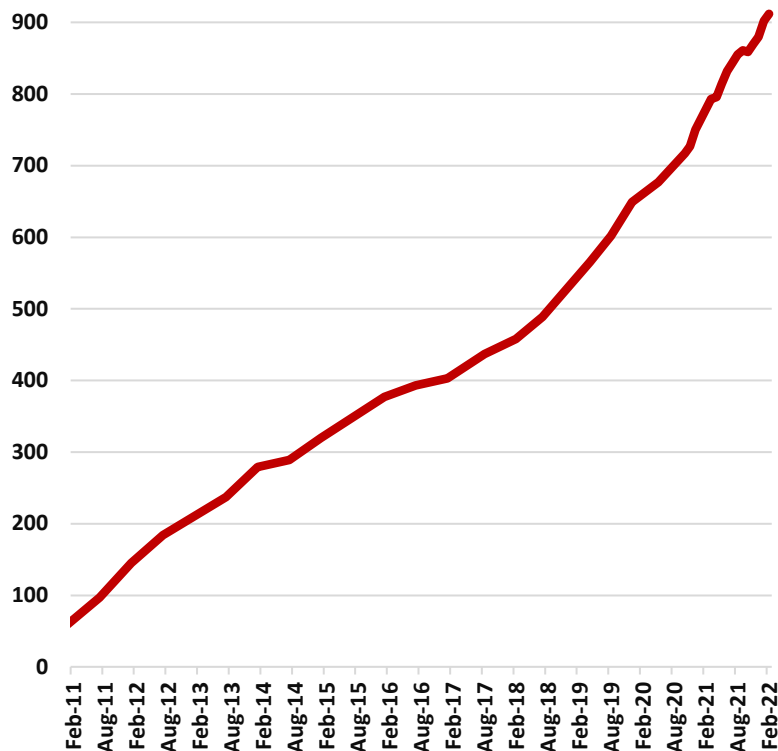
- Patient Safety Work Product (PSWP) - Reports that identify center-specific or physician-specific outcomes or processes
  - Semi-annual reports
  - Quarterly Dashboards
  - COPI/CAP1 reports
- All reports treated as confidential
- Utilization of PSWP
  - Encourages a culture of safety
  - Provides a mechanism for feedback
  - Non-identifiable
  - Never used for punitive or competitive purposes



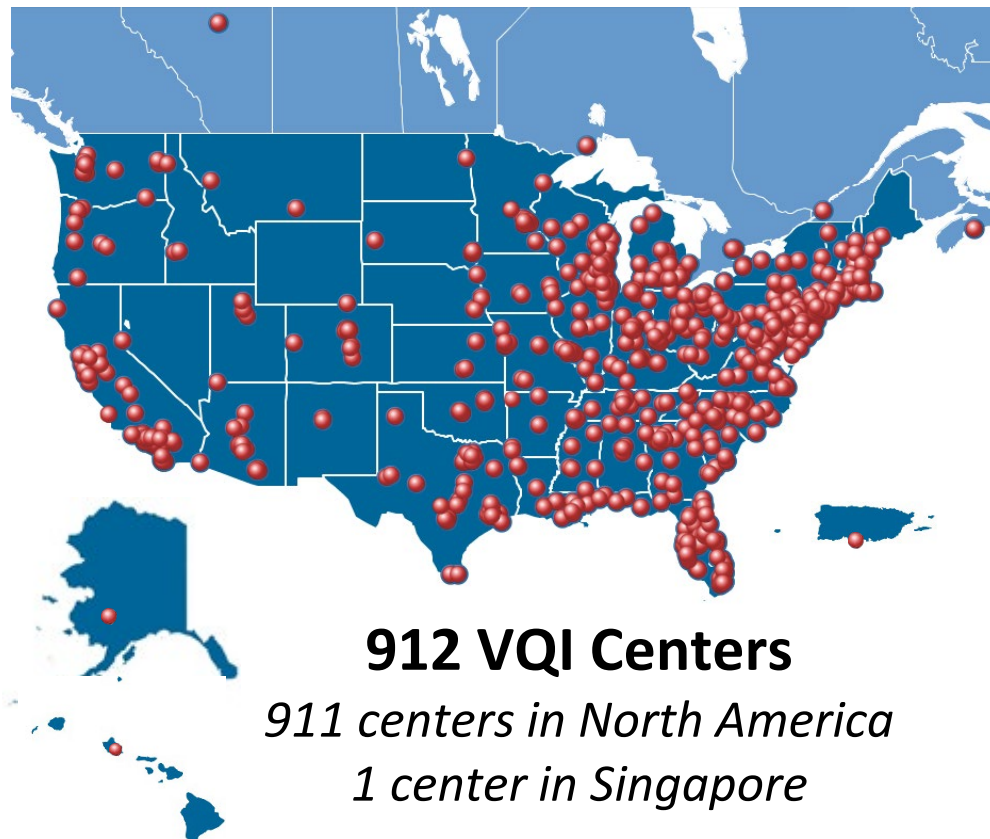
## Patient Safety Evaluation System (PSES)

- Designation of user account privileges
- PSWP analysis is recommended to be outside of normal QA/Peer Review meetings
- Develop process on how to integrate PSWP results into the overall QI operations
- PSES requires training for those with access to PSWP to ensure that the privilege & confidentiality of PSWP is maintained
- The law provides significant penalties for failure to maintain the confidentiality of PSWP.

## Number of Participating Centers



## Location of VQI Participating Centers



## 18 Regional Quality Groups

Canadian Vascular  
Quality Initiative



Michigan Vascular  
Study Group



nd

Vascular Study Group  
of Greater New York

Great Lakes Vascular  
Study Group

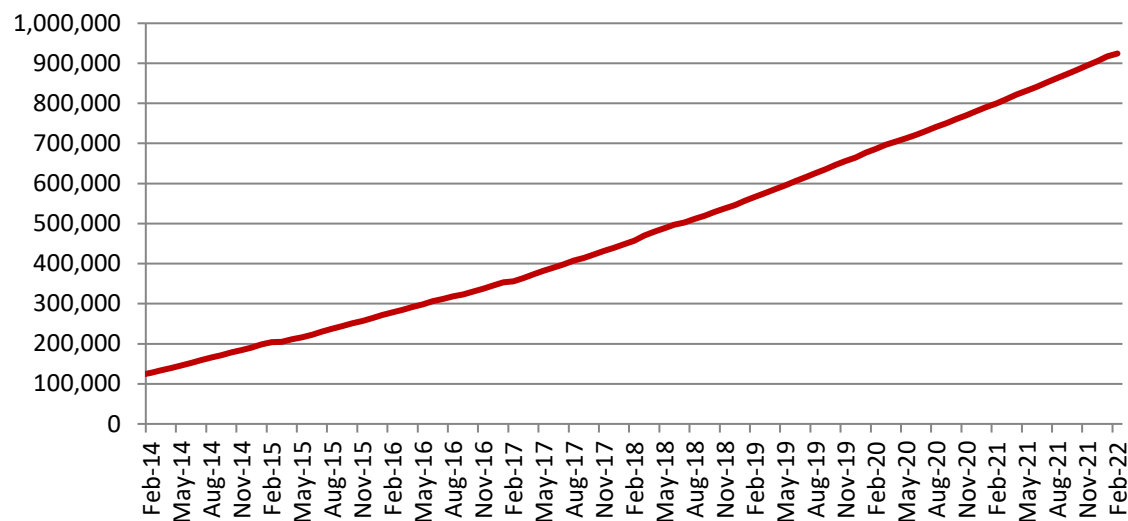
AK

HI

Puerto Rico

<b>Total Procedures Captured (as of 3/1/2022)</b>		<b>924,286</b>
Peripheral Vascular Intervention		313,170
Carotid Endarterectomy		170,726
Infra-Inguinal Bypass		72,646
Endovascular AAA Repair		70,670
Hemodialysis Access		69,019
Carotid Artery Stent		70,506
Varicose Vein		52,477
Supra-Inguinal Bypass		23,437
Thoracic and Complex EVAR		24,076
Lower Extremity Amputations		24,009
IVC Filter		16,970
Open AAA Repair		16,033
Vascular Medicine Consult		475
Venous Stent		72

## VQI Total Procedure Volume



Total Procedure Volume reflects net procedures added to the registry for the month

## 2022 VQI Annual Meeting at VAM

### Dates:

Tuesday afternoon, June 14, 2022,  
12PM – 6:30PM ET

Wednesday, June 15, 2022,  
8AM – 5PM ET

### Location:

Hynes Convention Center, Boston, MA

***\*Poster Presentation and Networking Reception  
Tuesday, June 14, 2022  
5:00PM to 6:30PM***

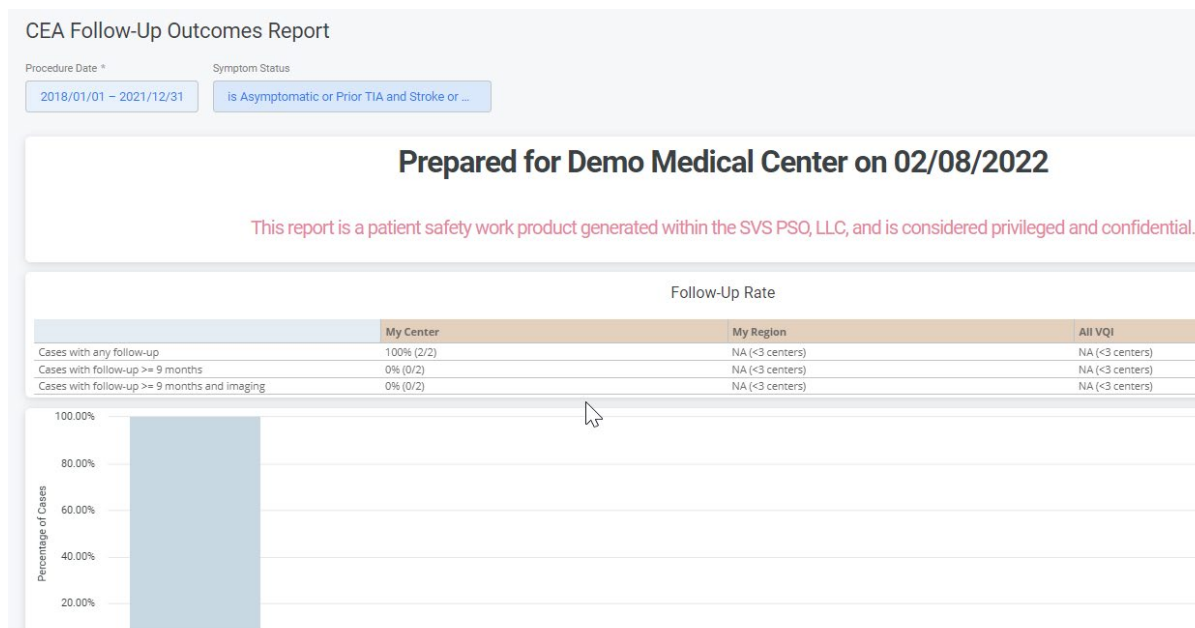


Hope to see you there!!!

# Long Term Follow Up Reports

Currently available:

- EVAR, CAS, CEA
- Soon to be released PVI, TEVAR, IVC, HDA.....



- Device Assist – New device search functionality within Pathways to assist in finding the devices used for treatment
  - Search by manufacturer, device name
  - Available in the PVI Registry Comprehensive data collection tool
- Symmetric – Healthcare supply software company
  - Reducing/eliminating data discrepancies
  - Providing real-time up to date access to FDA approved devices

The screenshot displays the 'Device Assistant' interface. On the left, under 'Occlusive Disease Information', there are several filters: 'Artery 1' (SFA, Right), 'Site of Prior Treatment' (Select), 'TASC Grade' (Select), 'Total Treated Length' (cm), 'Total Occlusion Length' (cm), 'Calcification' (Select), 'Number Treatment Types' (Select), 'Device 1' (Stent), 'Lesion Able to Treat' (Yes), and 'Occlusive Disease Device' (Select A Device). At the bottom left, there are checkboxes for 'None', 'Thrombolysis, pharmacologic', and 'Thrombolytic mechanical'. The main area features a search bar at the top, followed by a table with columns: Manufacturer, Brand, External ID, Product Nu..., Outer Dime..., Length, and Size Text. Each column has a 'filter column...' link. The table lists several devices, with the first row highlighted. At the bottom, there is a 'Page Size' dropdown set to 15, and a checkbox labeled 'I can't find my device.'.

Manufacturer	Brand	External ID	Product Nu...	Outer Dime...	Length	Size Text
Select	INC.					
Select	INC.			4.0 Millimeter	150.0 Millimeter	
Select	INC.			5.0 Millimeter	150.0 Millimeter	
Select	INC.			2.0 Millimeter	120.0 Millimeter	
Select	INC.			2.0 Millimeter	14.0 Millimeter	
Select	INC.			2.5 Millimeter	14.0 Millimeter	
Select	INC.			3.5 Millimeter	30.0 Millimeter	
Select	INC.			4.0 Millimeter	30.0 Millimeter	



## **My PAD** **My Peripheral Arterial Disease Pilot**



- Quality of Life survey for the PVI Registry
- Extending pilot to new interested centers
- Start up education and promotional documents will be provided
- For questions or interest please contact [cmorgan@svspso.org](mailto:cmorgan@svspso.org)



- Volunteer position
- Help to organize/coordinate Regional Meetings
- Disseminate information gathered from RLDM quarterly meetings with the SVS PSO staff to your region's Data Managers
- Strategies for recruitment & filling vacant positions




- Not guaranteed funds
- On average industry supporters provided \$1,000 - \$2,000 for regional meetings
- New reporting standards have changed food and beverage support for regional meetings
- Be prepared to cover these type costs with other funding

- A new VQI.org experience is coming!
- New look and feel, fresh content, and improved navigation.
- Our goal is to showcase the new site at VQI@VAM





The SVS Vascular Quality Initiative (VQI) is now on LinkedIn. Follow our page for the latest news and events!



The mission of the VQI is to improve the quality, safety, effectiveness and cost of vascular healthcare by collecting and exchanging information.

**SVS Vascular Quality Initiative (VQI)®**

Improving vascular care.



- The SVS PSO is pursuing the creation of a brand new VQI Mobile App that could be used on your personal device.
- We hope this will allow us to get information to you more effectively and efficiently.
- The VQI Mobile App will start out as a communication tool, and hopefully grow from there.



❑ Nov 2, 2021 – Day #1

❑ Benefit-risk profile of the Endologix AFX endovascular graft system with regards to the risk of Type III endoleaks

❑ Nov 3, 2021 – Day #2

❑ Real World Surveillance of AAA Endovascular Stent Grafts



## Conclusions:

Endologix AFX has history of increased Type III endoleaks –

- Panel expressed concerns about role of AFX 2
- Mitigation efforts taken
- Further steps underway with FDA, industry and VQI

Real World Evidence plays an important role in analyzing EVAR

- Follow up 5-10 years
- Needs support
- Clinical Registry – VQI
- Vascular Research Collaborative (VRC)
- VISION - CMS claims linkage



## VQI analysis of Paclitaxel controversy

### DELTA

Data Extraction and  
Longitudinal Trend Analysis  
2020-2024

Registry  
surveillance

Fred Resnic, MD



Lahey Hospital  
& Medical Center

### VISION

Vascular Implant Surveillance and  
Interventional Outcomes Network

VQI-CMS claims  
matched analysis



Phil Goodney, MD    Art Sedrakyan, MD



## Conclusions:

- Prospective, active surveillance of the SVS VQI PVI registry using DELTA did not demonstrate a signal for increased mortality
- Claims analysis through VISION did not demonstrate a signal for increased mortality or major amputation
- VQI data did not show increased mortality with Paclitaxel devices

# Regional Meeting CME/CE Credit



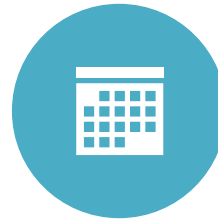
Des Moines University is the continuing education provider for this activity.



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



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



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



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



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

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

# Meeting Attendance Credit

## **REMEMBER TO PSO:**



- **P**UT your FULL NAME in RingCentral to get credit for attendance and CME/CE credit (no exceptions will be made)
- **S**END an email to [ljohnson@svspso.org](mailto:ljohnson@svspso.org) with names of group members that are sharing 1 device
- **O**FFICIALLY apply for CME/CE credit by clicking this link:  
[https://dmu.co1.qualtrics.com/jfe/form/SV\\_bvVaWchfYe3WhQq](https://dmu.co1.qualtrics.com/jfe/form/SV_bvVaWchfYe3WhQq)

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

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



# Quality Improvement Update Spring 2022

Dr. Betsy Wymer, DNP, RN, RN-BC  
Director Quality



# Trainee Program Update

- Mentor based 12–18-month program
- Regional meetings, center data review
- Quality and research opportunities
- VQI@VAM
- Chance to be selected for scholarship
- Quarterly check-ins with SVS PSO staff
- Satisfaction surveys, feedback
- [GLemmon@svspso.org](mailto:GLemmon@svspso.org) or [bwymmer@svspso.org](mailto:bwymmer@svspso.org)

# 2022-2023 FIT List

<b>FIT Mentors</b>	<b>FIT Trainees</b>	<b>Centers</b>
Sarah Deery	Aarathi Minisandram	Maine Medical Center
Graham Roche-Nagle	Ben Li	Toronto General Hospital
Sarah Zettervall	Blake Murphy	University of Washington Medical Center
Phil Goodney	Brianna Krafcik	Dartmouth Hitchcock Medical Center
Benjamin Brooke	Caronae Howell	The University of Arizona/University of Utah Hospital and Clinics
Shihuan K Wang	Channa Blakely	UTMB Health/Memorial Hermann Texas Medical Center
Danny Bertges	Christine Kariya	University of Vermont Medical Center
Adam Beck	Claire Motyl	University of Alabama Medical Center
Michael Murphy	Hanaa Dakour Aridi	IU Health – Methodist
Edward Gifford	Laura Healy	Hartford Hospital University of Connecticut
Eleftherios Xenos	Lauren Grimsley	UK Healthcare
Kyla Bennett	Leah Gober	University of Wisconsin Hospitals and Clinics Authority
Karan Garg	Rae Rokosh	NYU Langone Health
Beau Hawkins	Razan Elsayed	OU Medical Center
Mitchell Cox	Roberto Loazon	Duke University Health System
Nikoloas Zacharias	Srihari Kumar Lella	Massachusetts General Hospital



# Trainee Program Update

- Sign up to be a mentor
- Next Trainee application – January 2023
- Check [www.vqi.org](http://www.vqi.org) frequently
  - <https://www.vqi.org/quality-fellowship-in-training-fit-program/>
- Share your tweets  
#nextgenVQI

Quality Fellowship In Training (FIT)  
Program

Mentors For Quality FIT Program

Trainees for Quality FIT Program

## 2022 PARTICIPATION AWARDS PROGRAM

The four domains for the 2022 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**



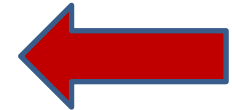
# Participation Awards

- <https://www.vqi.org/wp-content/uploads/2022-Participation-Award-Points.pdf>

## Domain – QI Project – 20% weighted

Scoring on 0 – 6-point scale to keep consistent with other measures. This gives centers options for getting **6 maximum QI points**.

- Initiation of a QI Project, evidenced by submitting a Project Charter to [QI@SVSPSO.ORG](mailto:QI@SVSPSO.ORG) or [bwymmer@svspso.org](mailto:bwymmer@svspso.org) (2 points). **One charter per year.**
- Presenting a QI Project (presentation or poster) at a Regional VQI, \*Regional Society Meeting, or \*Hospital **Board** meeting (2 points) *When presenting at succinct regional meetings, project slides must reflect a change or update in status.*
- Presenting a QI Project (presentation or poster) at the National VQI or \*Vascular Annual Meeting (2 points)
- \*Publish a **VQI quality improvement** article in a Peer Reviewed Journal (2 points)
- Centers with significant improvement or excellent performance rates on National QI Initiatives will receive one additional point (per initiative), for a maximum of 6 QI points



\* Please send attestation (proof) to [bwymmer@svspso.org](mailto:bwymmer@svspso.org) on or before December 31, 2022.

# Participation Award Results



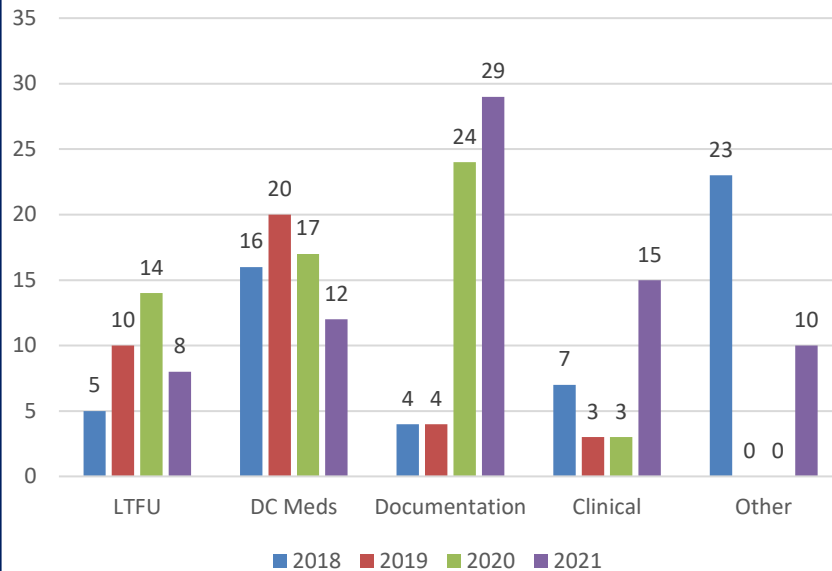
Coming Soon!!!!

**Congratulations!**

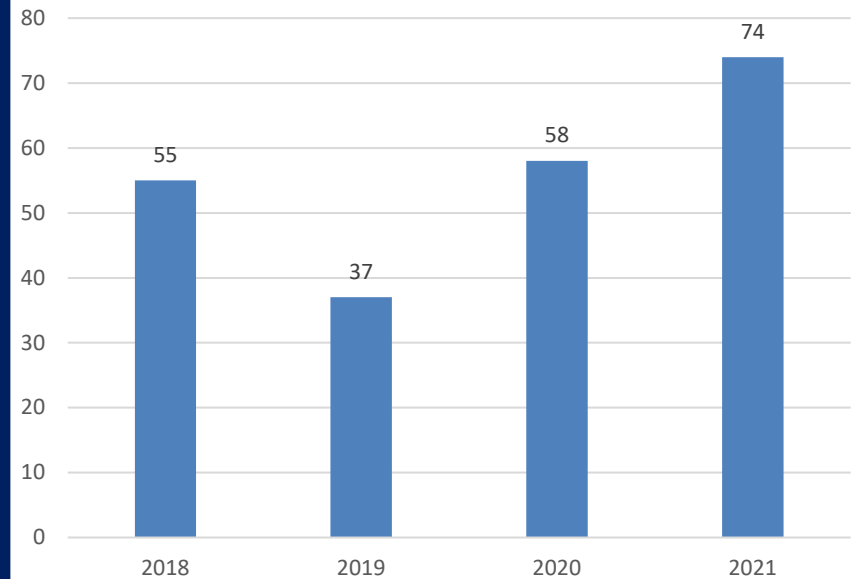


# Charter Historical Review

Quality Improvement Charters



Quality Improvement Charters



- How to Begin a Charter
  - Attend Charter Focus Calls
  - Listen to Prior Webinars
    - [www.vqi.org](http://www.vqi.org)
  - Review Sample Charters
    - <https://www.vqi.org/quality-improvement/qi-projects/>
  - Network with colleagues
  - 1:1 Meeting
    - [bwymmer@svspso.org](mailto:bwymmer@svspso.org)





- Charter Focus Calls
  - New format
- Quarterly Webinars
- Monthly VQI Newsletter
- Sample Charters
- Overview of QI Tools
- <https://www.vqi.org/quality-improvement/>



# Arterial Quality Council:

**Benjamin Brooke, MD, PhD**

- Discussion for development of new National Quality Initiatives
  - Discharge Mediation measure placed in maintenance mode due to high compliance
  - EVAR Sac Diameter – need for continued efforts to improve compliance
- National LTFU Survey creation & results
- VQI Risk Calculators
- Harmonization of Urgency variables as much as possible across “like” registries

# Venous Quality Council:

**Brigitte K Smith, MD**

SVS created a separate Venous RAC

[The Vascular Quality Initiative - National Venous RAC Schedule \(vqi.org\)](https://vqi.org)

2021: 3 proposals

- Incidence of venous thromboembolic events (VTE) after endovenous ablation in patients with venous stasis ulcers (C6 disease): **Jaime Benarroch-Gampel**
- Impact of Treatment Length and Treatment Region on Clinical Outcomes after Varicose Vein Procedures: **Halbert Bai**
- Safety and efficacy of endovenous ablation in patients with a history of DVT: **Mikel Sadek**
- AVF meeting  
February 23rd - 26th, 2022

## Ideas for Venous Registry Specific Metrics:

- Anticoagulation after venous stents?
- C2 disease for varicose veins?
- IVC temporary filter retrieval ?
- IDEAS???

# Arterial Research Advisory Council:

## Benjamin Brooke, MD, PhD

## **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

# Spring 2022 RAC Submission Reminders

- Ensure your RAC submission is complete
  - Data Tables
  - Full Research proposal
  - CV
  - Regional RAC Review
- Your center must participate in the registry related to your research proposal

## 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 \(vqi.org\)](#)

# Governing Council:

**Jens Jorgensen, MD**



# Spring 2022 GC Update

- Dr. Lemmon provided an updated on the VQI Fellows in Training program
- The Governing Council provided input on the PSO 2022/2023 software development activities
- Dr. Jorgensen provided an update on the FDA panel discussions regarding type 3 endoleaks
- Kristopher Huffman presented the PSO's strategy around the development and maintenance of Risk Calculators

- Call for nominations to fill vacancy for the RMVQI Venous Research Advisory Council.
  - Three-year term with one additional renewal
  - Email notification to the region Sent March 14, 2022, of officer nominations.
  - Region will be permitted a period of one week to nominate individuals.
  - Regional EC will be given three weeks to vote for their member of choice.
  - All nominations will be conducted in the spring.



Updates for Spring 2022  
VQI Regional Meeting



## PATHWAYS Support

### Claims Validation

*The annual claims validation process is intended to ensure that all eligible cases have been captured in the registry and is a requirement of participation in the VQI.*

The 2020 Claims Validation process was launched in September 2021.

- The deadline to finish was 12/31/21.
- PATHWAYS Support is here to help you. Please reach out if your center was selected to participate in the audit and would like assistance.

The selection and launch of **2021 Claims Validation** is **coming soon!** Stay tuned!

## What's New?

Please check out recent enhancements in the PATHWAYS Support tab designed to improve your experience. Let us know what you think!

- **Documents** – Easy access to important abstraction documents.
  - **Code List** – Complete list of current VQI Eligible ICD-10 and CPT codes.
  - **Data Dictionary** – Ability to download data variables by procedure or all procedures.
  - **Inclusion/Exclusion Criteria** – Defines the procedures that are eligible for Inclusion/Exclusion in the registry.
  - **Paper Form** – Paper form for data abstraction.
- **Release Notes** - Access details on historical registry updates and other important announcements.
- **Training Schedule** – List of upcoming training opportunities and registration links for new staff and experienced abstractors.



PATHWAYS Support

**Coming Soon...**

The Support Team continues to work on implementing enhanced tools and training opportunities for new and existing PATHWAYS users to learn more about PATHWAYS functionality.

More details to come!

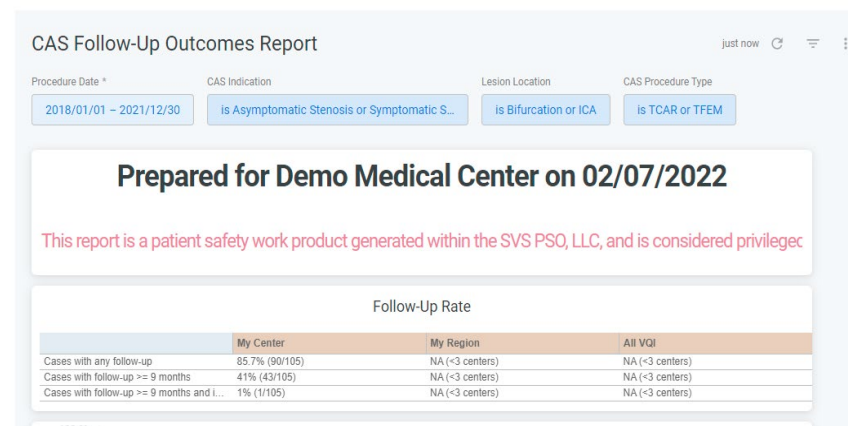


# Technology Updates for VQI



## Released in Q3 2021

- CAS Follow-up Outcomes Report
  - A new 'Follow-up Outcomes Report' for the CAS registry, developed by the SVS PSO, is now available in the PATHWAYS Reporting tab. The report will provide key follow up metrics for VQI sites with center data as well as regional and all VQI benchmarking and includes drill down capabilities to better understand center data at the procedure level.





## Released in Q3 2021

- **Infra Opioid Pilot**
  - Infra-inguinal Bypass registry was updated to include new Opioid fields for all participating sites. The fields appear on their own tab at the end of the procedure and follow-up forms.
  - Procedure variables were added to the Procedure form in a tab called "Opioid". The tab contains both Demographics and Post-Op variables.
  - Follow-up variables are in the 30-day follow-up and long-term follow-up forms for Infra-inguinal Bypass procedures.
  - Discharge and follow-up opioid detail columns display dynamically depending on type(s) of opioids selected.



## Released in Q3 2021

- Infra Opioid Pilot, cont.
  - Follow-up medications also include reference columns so the user can see the number of pills/patches and refills originally prescribed at discharge. These reference columns automatically populate based on data entered in the procedure form, or display N/A if there is no discharge information available.
  - For discharge and follow-up opioids, the Morphine Equivalent (MME) column is automatically calculated using medication-specific factors. MME is calculated as  $\text{Dose} \times \text{Frequency} \times \text{Conversion Factor}$ . We will not calculate the MME value if the medication type is Other, and/or if the frequency is PRN. Please note that for Methadone the conversion factor increases at higher doses and for Fentanyl it is dosed in mcg/hr instead of mg/day.



## Released in Q3 2021

- TEVAR revisions - New dependency for LTFU Entry Flow and Dissection Date and Type
  - TEVAR LTFU Entry Flow:
    - A change was made to the dependency for Entry Flow on the TEVAR follow-up form. The field 'Entry Flow' no longer displays when imaging is equal to 'None'.
  - TEVAR Dissection Date and Type:
    - There was formerly no validation between Dissection Onset Date and Procedure Date, or between Dissection Onset Date and Dissection Type. As such, it was possible to enter a Dissection Date that is after Procedure Date, as well as record a Dissection Date that does not match the selected type (Acute or Chronic). Validation was added so if this mismatch occurs, users must correct either the 'Dissection Date' or the 'Dissection Type' before being allowed to submit the procedure form.



## Released in Q3 2021

- CEA revisions
  - New fields associated with imaging were added.
  - New dependencies were added to the Modified Rankin Score fields so they will display on the form only when the patient had a stroke.
  - The layout of the Pre-op Imaging section was changed slightly in order to harmonize the format with other registries where Right and Left sides are displayed separately in two columns.
  - The Stenosis fields being retired were mapped to new fields.



## Released in Q3 2021

- CAS revisions
  - New event fields and fields associated with imaging were added in order to collect more granular information.
  - Modified fields - Lesion Stenosis L1 and L2 have updated min/max ranges from 0-99 to 0-100.
  - The Other Imaging Stenosis fields were retired and replaced with fields that are specific to each imaging type.



## Released in Q3 2021

- VMC revisions
  - New fields were added to the VMC registry to capture Peak Systolic Velocity and End Diastolic Velocity Stenosis Events in the Procedure and Long-Term Follow-up.
  - The response options for the Carotid Stenosis Right and Carotid Stenosis Left in both the Procedure and the Follow-up forms were revised.
  - The Carotid PSV Right and Carotid PSV Left data collection fields were retired. The layout of the Carotid Disease section of the Procedure Form will be changed slightly in order to harmonize the format with other registries where Right and Left sides are displayed separately in two columns.



## Released in Q3 2021

- IVC Filter revisions
  - The registry consolidated the “Other” IVC filter device options into a single option for both retrievable and permanent devices. All of the “Other” temporary and retrievable devices (select options 20 through 39 in the IVC\_FILTER\_TYPE field) were retired and a new 99 = Other field was created which will open the existing Other field (IVC\_FILTER\_TYPE\_OTHER).



## Released in Q3 2021

- Add comment to completed record
  - Users are now able to append additional comments without making changes to original data in the form. The Comments field now includes a new button labelled “Update Comments” that initially appears as grayed out. If users change or add any information in the Comments field, the button becomes active and allows the user to save the changes without reverting the form.

Comments

12 of 2000

Update Comments


Save Changes and Revert to Incomplete Cancel



## Released in Q3 2021

- Auto-save before timeout
  - Formerly, if users were logged out of PATHWAYS due to inactivity, any data entry changes they have made were lost. This feature will automatically save changes to records and will flag the record accordingly in the record information table.

Incomplete Records Report

	First Name	Last Name	Date of Birth	MRN	Procedure	Physician	Type	Procedure Date	Followup Contact Date	Created Date	Updated Date	Autosaved 
<a href="#">Resume</a>	Pvi	Wilson	06/02/1937	1000001	Peripheral Vascular Intervention	Demo Doctor	Procedure	04/15/2021	-	04/15/2021	08/05/2021	Yes
<a href="#">Resume</a>	Inas	Yassine	10/12/1993	1232334345545	Venous Stent	Walter Freeman	Long Term Follow-up	07/01/2020	04/06/2021	04/07/2021	08/04/2021	Yes
<a href="#">Resume</a>	Z	Zzzzz	01/01/1950	1959	Thoracic and Complex EVAR	Alice Adams-King	Procedure	12/11/2021	-	06/28/2021	06/28/2021	-
<a href="#">Resume</a>	Inas	Yassine	10/12/1993	1232334345545	Varicose Vein	Name Doc	Procedure	07/07/2021	-	07/21/2021	07/21/2021	-
<a href="#">Resume</a>	Pvi	Wilson	06/02/1937	1000001	Peripheral Vascular Intervention	Alice Adams-King	Procedure	06/09/2021	-	06/09/2021	07/12/2021	-
<a href="#">Resume</a>	R	S	08/25/1950	MR7777	Thoracic and Complex EVAR	Theodore Geisel	Procedure	06/01/2021	-	06/30/2021	06/30/2021	-



## Released in Q4 2021

- EVAR and TEVAR revisions: Convert "Aptus HeliFX" device name to "HeliFX"
  - The manufacturer name was removed from the response options for the "Anchors Type" field. Therefore the "Aptus Heli-FX" device name was converted to "Heli-FX". This change affected both the procedure and long-term follow-up (LTFU) forms.



## Released in Q4 2021

- **EVAR Follow-up Outcomes Report**
  - The existing EVAR Follow-up Outcomes report was moved from Insights to the Reporting tab in PATHWAYS. As a result, the Report Privileges in the User Information page under the Admin tab replaced the current Insights section.
  - The report was updated to include Kaplan Meier rates of occurrence for Stroke, Myocardial Infarction, Mortality, and Re-intervention at 1 year.
  - At the time of release, all users who currently had access to the Insights version of the report will automatically have the permission enabled for the updated version.



## Released in Q4 2021

- Custom Lists
  - A new “Custom Lists” button was added to the Admin tab in PATHWAYS. The existing “Assistant Setup” and “Hemodialysis Access Late Follow-up Contact” icons under the Admin tab were transitioned to the “Custom Lists” functionality. Custom Lists will allow users to create Assistants, Trainees and Hemodialysis Access late Follow-Up Contacts





## Released in Q4 2021

- **Infra Opioid Updates**
  - Antidepressant option was removed from the Non-Opioid Pain Med Use variables.
  - The Number of Pills Prescribed fields was modified to accept 3 digits instead of 2.
  - The “Number of Refills Since Procedure” labels was changed to “Number of New Prescriptions Since Procedure.”
  - The Dose, frequency, number of pills/patches, and number of new prescriptions fields will be optional in the 30-day follow-up form.
  - The Dose, frequency, number of pills/patches, and number of new prescriptions fields will remain required on the Long-Term Follow-up (LTFU) but will not be mandatory for follow-up credit.
  - The LTFU Completion Rate will be recalculated. LTFU records submitted before the release that meet the updated mandatory field requirements will be flagged as valid and included in the calculation for successful follow-up.



## Released in Q4 2021

- VQI Across Registry Revisions - Gender to Sex
  - The label for the “Gender” data collection field will be changed across all VQI registries to “Birth Sex” and a new response option, “Other”, will be added. The help text will be updated to reflect this change:

### **Birth Sex**

Male = As assigned at birth.

Female = As assigned at birth.

Other = Not designated.



## Released in Q4 2021

- New COVID Vaccination fields
  - Four new data collection fields will be added under the Procedure tab in PATHWAYS to collect information about COVID-19 vaccines

COVID Vaccination

Yes



Date of Last Vaccine Dose



COVID Booster (re-vaccination)

Yes



Date of Last Vaccine Dose





## Released in Q4 2021

- New Trainee and Other Assistant fields
  - PATHWAYS Admin section of PATHWAYS was updated to introduce new Trainee fields to the VQI registries. This release allows trainee and other assistant information and retires the Assistant field previously used to collect similar information.

---

Trainees

	Trainee 1	Trainee 2
Trainee	<input type="text" value="Select"/>	<input type="text" value="Select"/>
Level of Trainee	<input type="text" value="Select"/>	<input type="text" value="Select"/>
Trainee Role	<input type="text" value="Select"/>	<input type="text" value="Select"/>

Other Assistants

	Other Assistant 1	Other Assistant 2
Assistant Type	<input type="text" value="Other"/>	<input type="text" value="Select"/>
Specify Other	<input type="text"/>	



## Released in Q4 2021

- EVAR/TEVAR revisions
  - **EVAR**
    - The min/max range for Largest Sheath Size Right and Largest Sheath Size Left will be changed from 7-24 to 6-24.
    - The help text will be updated to reflect the change in the min/max range, and the existing EVAR Devices graph will be removed.
  - **TEVAR**
    - The min/max range for Largest Sheath Size Right and Largest Sheath Size Left will be changed from 16-30 to 6-30.
    - The help text will be updated to reflect the change in the min/max range, and the existing TEVAR Devices graph will be removed.



## Released in Q4 2021

- CEA Follow-up Outcomes Report
  - A new 'Follow-up Outcomes Report' for the CEA registry, developed by the SVS PSO, is now available in the PATHWAYS Reporting tab. The report will provide key follow up metrics for VQI sites with center data as well as regional and all VQI benchmarking and includes drill down capabilities to better understand center data at the procedure level.

CEA Follow-Up Outcomes Report

just now

Procedure Date \*

Symptom Status

2018/01/01 – 2021/12/31

is Asymptomatic or Prior TIA and Stroke or ...

Prepared for Demo Medical Center on 02/07/2022

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

Follow-Up Rate

	My Center	My Region	All VQI
Cases with any follow-up	100% (2/2)	NA (<3 centers)	NA (<3 centers)
Cases with follow-up >= 9 months	0% (0/2)	NA (<3 centers)	NA (<3 centers)
Cases with follow-up >= 9 months and i...	0% (0/2)	NA (<3 centers)	NA (<3 centers)



# Registry Projects



## **SVS Post-Market Surveillance Projects**

- These projects are conducted within the SVS PSO and only non-identifiable data (removal of patient, center and physician information) will be provided to Medtronic/BARD/Cook/Gore or the FDA. Only standard of care practice is being evaluated. For such PSO activities, patient informed consent and Institutional Review Board review are not required.
- Sites must follow their institutional guidelines.



## TEVAR Dissection Surveillance Project

- The SVS PSO is excited to announce the continuation of the TEVAR Dissection Surveillance Project to evaluate the Cook Zenith Dissection Endovascular System. FDA approval was granted for this device after safety and effectiveness were demonstrated in pre-market studies of complicated dissection with the proviso that the efficacy of TEVAR treatment of descending aortic dissection would be more fully analyzed through post-market surveillance, as was done through VQI for the W. L. Gore and Medtronic devices after their approval.
- Patients will have 30 day, and annual visits for 5 years.
- Total reimbursement of \$4,000 per patient for a patient followed annually for 5 years



## TEVAR Dissection Surveillance Project

- 73 of the 180 required patients enrolled (39 potential cases in process)
- Retrospective enrollment allowed- All eligible cases from December 31, 2018 (protocol FDA approval date)
- 34 30-Day visits completed, 18 1-year follow-up visits completed and 1 2-year follow-up visit completed
- All 40 sites enrolled (5 are in contracting)
- This project is conducted within the SVS PSO and only non-identifiable data (removal of patient, center and physician information) will be provided to Cook or the FDA. Only standard of care practice is being evaluated. For such PSO activities, patient informed consent and Institutional Review Board review are not required.



## TEVAR Dissection Surveillance Project



**TEVAR Dissection Surveillance  
5 Year Project Gore and Medtronic Arm**



- Initiated in October 2014, the TEVAR Dissection Surveillance Project Arm evaluates the W.L. Gore and Medtronic devices for treatment of Type B thoracic dissections.
- Meeting FDA requirement
  - 194 chronic and 200 acute patients with device technical success
- Currently in 5-year follow-up phase



# **PATHWAYS Support**

- In conjunction with the Rocky Mountain Vascular Society Meeting
- July 14-17, 2022



# Meeting Attendance Credit

## **REMEMBER TO PSO:**



- **P**UT your FULL NAME in RingCentral to get credit for attendance and CME/CE credit (no exceptions will be made)
- **S**END an email to [ljohnson@svspsso.org](mailto:ljohnson@svspsso.org) with names of group members that are sharing 1 device
- **O**FFICIALLY apply for CME/CE credit by clicking this link:  
[https://dmu.co1.qualtrics.com/jfe/form/SV\\_bvVaWchfYe3WhQq](https://dmu.co1.qualtrics.com/jfe/form/SV_bvVaWchfYe3WhQq)

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