

# 2024 SVS VQI ANNUAL REPORT



**SVS** | **VQI**

*In collaboration with NCDR®*

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# 1. EXECUTIVE SUMMARY - THE VALUE OF PARTICIPATION IN THE SOCIETY FOR VASCULAR SURGERY (SVS) VASCULAR QUALITY INITIATIVE (VQI)



## What's on the Horizon for VQI and the Future of Vascular Care?

The past few years have been marred by significant upheavals, from global conflicts and health crises to controversies within the vascular field. As we navigate through these turbulent times, one question emerges – what's next? Artificial Intelligence (AI) has emerged as a powerful force, revolutionizing various industries and offering new possibilities for data analysis and decision-making. The VQI database, with its wealth of data and potential for guiding action, is well poised to harness the capabilities of AI in driving quality improvement initiatives and shaping the future of vascular care.

While traditional statistical methods have been the cornerstone of data analysis within the VQI registry, the exploration of AI as a complementary tool holds promise for uncovering insights and optimizing patient outcomes. Learning from our data remains paramount, with a focus on identifying strategies that enhance care delivery and improve patient safety. As we embark on this journey of discovery, the utilization of AI alongside established methodologies will enable us to unlock new perspectives and drive transformative change in vascular healthcare.

The impact of VQI data on clinical practice and patient outcomes cannot be overstated, as evidenced by the numerous scientific publications and real-world improvements in care delivery. The collaborative efforts of VQI members and partners have not only advanced the field of vascular diseases but have also paved the way for global initiatives and collaborations through platforms like the International Consortium of Vascular Registries (ICVR).

Looking ahead, the VQI registries are poised for continued growth and impact, with a steadfast commitment to promoting excellence in care and driving innovation through data-driven insights. With over 1,000 centers contributing to the registry and an ever-expanding dataset with over 1,200,000 procedures, VQI remains at the forefront of quality improvement, research, and collaborative efforts aimed at enhancing vascular care on a national and international scale.

As we embrace the challenges and opportunities that lie ahead, we are confident that the VQI clinical registry will continue to serve as a vital tool for shaping the future of vascular care. Through ongoing collaboration, innovation, and a steadfast commitment to excellence, we stand ready to navigate the evolving landscape of healthcare and redefine the standards of care for vascular patients worldwide. Thank you for your continued support and dedication to our shared mission of improving patient outcomes and advancing the field of vascular healthcare.

Dr. Jens Eldrup-Jorgensen  
SVS PSO Medical Director

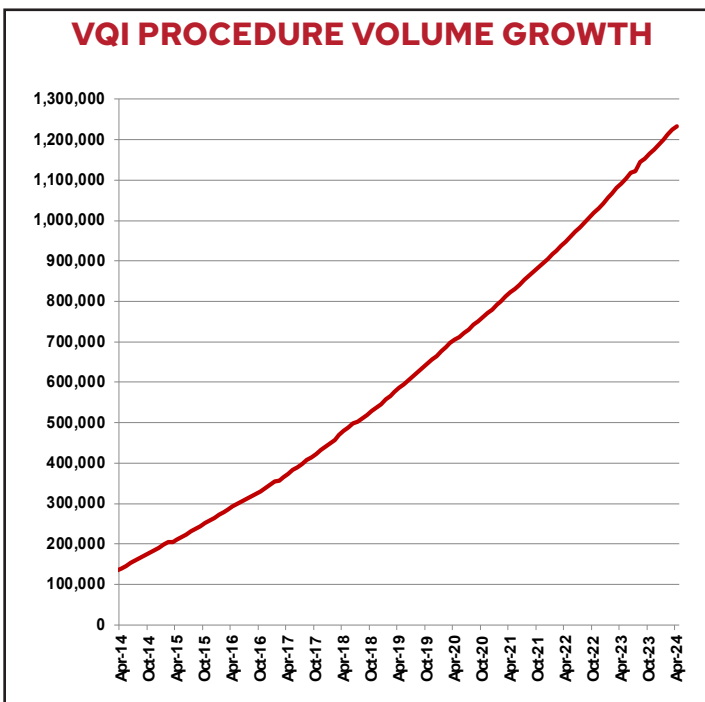
## 2. INTRODUCTION TO THE SVS VQI

The SVS VQI is a collaboration of the SVS Patient Safety Organization (PSO), 18 regional quality improvement groups, and Fivos, its commercial technology partner. The mission of SVS VQI is to improve the quality, safety, effectiveness, and cost of vascular healthcare.

The SVS PSO is a wholly owned subsidiary of the Society for Vascular Surgery, with headquarters in Rosemont, IL. The SVS PSO governs all functions of SVS VQI, including the specification of data elements captured in each registry, the standard reports made available to regional groups, member hospitals and physicians, and SVS VQI national quality improvement projects.

The SVS PSO is supported by over 250 physician volunteers who dedicate their time and effort in support of the SVS VQI mission. These physicians provide content expertise, advice, clinical support to all the registries and data analyses and ad-hoc support in areas such as industry partnerships and communications. In addition, each center and region have lead physicians and regional medical directors to provide guidance, identify best practices and develop regional initiatives.

The SVS PSO operations are funded by annual registry subscription fees from participating hospitals or physician groups. Enhancements, upgrades and new projects are funded by contributions from corporate supporters.



## THE SVS VQI REGISTRIES

As of May 1, 2024, there are 14 SVS VQI registries that contain 1,092,096 vascular procedures. From April 1, 2022 through May 1, 2023, there were over 155,000 procedures added to the registries.

Total Procedures Captured as of 5/1/2024		1,233,467
Peripheral Vascular Intervention		428,682
Carotid Endarterectomy		214,378
Carotid Artery Stent		127,659
Endovascular AAA Repair		89,163
Infra-Inguinal Bypass		88,754
Hemodialysis Access		82,677
Varicose Vein		66,572
Thoracic and Complex EVAR		34,131
Lower Extremity Amputations		32,672
Supra-Inguinal Bypass		28,044
IVC Filter		19,324
Open AAA Repair		19,213
Vascular Medicine Consult		1,923
Venous Stent		275



### 3. SVS VQI - TAKING STEPS FORWARD FOR VASCULAR CARE

It's been another exciting year for the SVS VQI, forging new pathways for improved quality and patient safety in vascular medicine. Here's a look at the SVS VQI by numbers.

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**1,230,000+**  
procedures

---

**1,000+**  
participating centers

---

**6,000+**  
contributing  
physicians

---

**100+**  
annual quality  
charters

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**18**  
regional  
quality groups

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### POTENTIAL BENEFITS OF VQI FOR KEY STAKEHOLDERS

#### For Patients

- Improve care based on SVS VQI data and quality initiatives
- Use best practices to reduce length of stay
- Improve long-term outcomes through emphasis on follow-up and secondary prevention

#### For Physicians/Providers

- Adopt best practices through SVS VQI data analysis and compliance with guidelines
- Improve care through quality initiatives and charters
- Monitor performance by comparison with regional and national benchmarks
- Improve patient selection using SVS VQI risk assessment calculators

#### For Hospitals and Quality Officers

- Improve care by quality initiatives and projects
- Regional and national benchmarks for QA and QI efforts
- Reduce expenses by addressing resource utilization and length of stay

#### For Policymakers

- Better data to inform decision making on policy development
- Monitor safety and efficacy using real world evidence
- Work collaboratively with the SVS to develop quality measures

#### For Payers

- Adopt best practices to provide better care and reduce complications and expenses
- Inform population health approaches through use of comparative data
- Reduce expenses due to decreased length of stay and resource utilization

#### For Industry

- Enhance efficiency for label expansion using registry data
- Utilize registry-based trials for pre-market approval and post-market surveillance
- High quality, large scale, real world data for evaluation of device performance

## 4. SVS VQI MEMBERS PROFILE

Participation in SVS VQI continues with steady growth reaching over 1,000 centers including office-based laboratories by the end of May 2024 (Figure 4.1). There is a broad distribution of different practice types – 26% academic institutions, 30% teaching hospitals and 44% community hospitals (Figure 4.2). There is also broad distribution of physician specialties – 42% vascular surgeons, 18% interventional cardiology, 14% interventional radiology, 5% general surgery, 5% cardiothoracic surgery, 4% neurosurgery, 3% podiatry, 2% orthopedic surgery and 2% Neurology (Figure 4.3).

<b>Canadian Vascular Quality Initiative</b>   7 Centers
<b>Carolinas Vascular Quality Group</b>   41 Centers
<b>Great Lakes Vascular Study Group</b>   63 Centers
<b>Michigan Vascular Study Group</b>   37 Centers
<b>Mid-America Vascular Study Group</b>   81 Centers
<b>Mid-Atlantic Vascular Study Group</b>   94 Centers
<b>MidSouth Vascular Study Group</b>   26 Centers
<b>Midwest Vascular Collaborative</b>   50 Centers
<b>Northern California Vascular Study Group</b>   26 Centers
<b>Pacific NW Vascular Study Group</b>   38 Centers
<b>Rocky Mountain Vascular Quality Initiative</b>   55 Centers
<b>Southeastern Vascular Study Group</b>   137 Centers
<b>Southern California VOICE</b>   42 Centers
<b>Southern Vascular Outcomes Network</b>   116 Centers
<b>Upper Midwest Vascular Network</b>   65 Centers
<b>Vascular Study Group of Greater New York</b>   45 Centers
<b>Vascular Study Group of New England</b>   48 Centers
<b>Virginias Vascular Study Group</b>   45 Centers
<b>Singapore</b>   1 Center
<b>TOTAL CENTERS</b>   1,019 Centers

Figure 4.1: Growth of SVS VQI Centers (as of May 1, 2024)  
Source: Fivos PATHWAYS data, May 2024

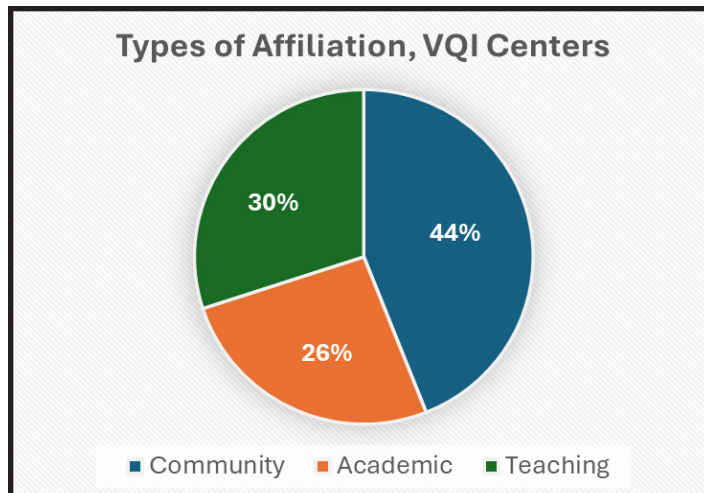


Figure 4.2: SVS VQI Participating Hospital Types

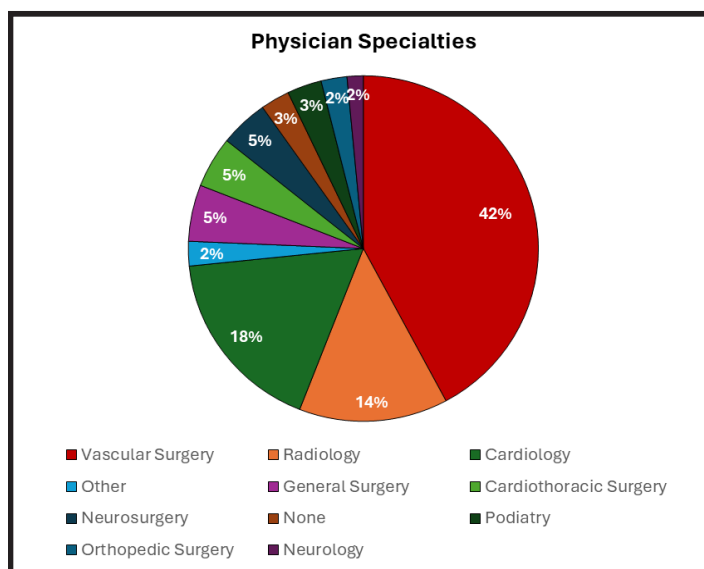


Figure 4.3: Distribution of SVS VQI Physician Specialties

Source: Fivos PATHWAYS Data, May 2024

a, April 2023



## 5. SVS VQI TRAINEE PROGRAM

The SVS PSO rolled out the Quality Fellowship in Training (FIT) pilot program for residents and fellows in vascular surgery and medicine in collaboration with APDVS in 2022. The Fellowship in Training (FIT) program was designed to introduce residents and fellows in vascular programs to quality improvement through the mechanism of our patient safety organization (VQI/PSO). Using a mentor-directed approach, these FIT applicants work closely with their VQI mentor on participation in regional biannual meetings and reviewed comparative data including center level quality improvement processes. Opportunities include engagement in quality charter development, center level QI process and research initiatives using VQI data reviewed by the VQI research advisory committee (RAC). Advancement through the 12–18-month program provides the FIT applicants opportunities to present their work during VQI@VAM with potential selection for a highly coveted Jack L. Cronenwett Scholarship to continue research and/or work more closely with VQI/PSO staff and committees. Monthly FIT Program Zoom meetings were added over the past year to build a FIT community and provide guidance of ongoing research activities and quality improvement projects.

The first class of FIT Scholars that were selected included Ben Li, Hanaa Dakour Aridi, Caronae Howell, Brianna Krafcik, and Christine Kariya. Over the past year, they have been instrumental in engaging with RAC Committees, VQI Statistical support, VQI@VAM program development and review, as well as other PSO Committee involvement while continuing their quality and/or research FIT Program project.



Five of the Eleven 2023-2024 FIT Fellows 2nd class were selected in either Quality Improvement or Research to receive the Jack L. Cronenwett Scholarship. Those selected included:

### 2023-2024 Jack L. Cronenwett Scholarship Award Recipients

#### **Saranya Sundaram, PGY-3**

Medical University of South Carolina  
Mentor: Dr. Thomas Brothers

#### **Mikayla Lowenkamp, PGY-4**

University of Pittsburgh Medical Center  
Mentor: Michael Madigan  
Co Mentor: Mohammad Eslami

#### **Mitri Khoury, PGY-9**

Massachusetts General Hospital  
Mentor: Nikolaos Zacharias

#### **Christopher Chow, PGY-2**

University of Miami  
Mentor: Arash Bornak

#### **Amanda Filiberto, PGY-8**

University of Alabama at Birmingham,  
Mentor: Adam Beck, MD

A large, colorful confetti graphic consisting of many small, multi-colored rectangular pieces scattered across the page.

*Congratulations*

## 5. SVS VQI TRAINEE PROGRAM (CONTINUED)



Figure 5.1: Back Row L-R Dr. Gary Lemmon, Co-Founder of FIT Program; Dr. Jack Cronenwett, Scholarship Honoree; Dr. Adam Johnson, Chair of FIT Program. Bottom Row L-R JC Scholars Dr. Ben Li, Dr. Hanaa Dakour Aridi, Dr. Christine Kariya, Dr. Brianna Krafcik and Dr. Caronae Howell

A rigorous selection process was employed to review over twenty applicants with stellar resumes for the third class, 2024 -2025, FIT Fellow application process. We are inspired by the genuine interest in and commitment to quality improvement. We are confident that the VQI FIT Program will further enhance their knowledge and skills to be able to lead and improve the quality of vascular care throughout their careers. Please join us in congratulating this next outstanding group of young physicians committed to vascular care!

### 2024-2025 SVS VQI FIT FELLOWS

#### **Lisa Vi**

Mentor: Dr. Miranda Witheford  
University Health Network, Toronto, ON

#### **Chinmayee Potti**

Mentor: Dr. Mounir Haurani  
The Ohio State University

#### **Lindsey A. Olivere**

Mentor: Dr. Michael Madigan  
UPP Vascular Surgery

#### **Gabrielle Rieth**

Mentor: Matthew Corriere  
Wexner

#### **Guillermo Polanco Serra**

Mentor: Dr. Pouya Entezami  
Henry Ford Health

#### **Michael Chaney**

Mentor: Dr. Jason Ryan  
Western Michigan University

#### **Vinay Bhushan Lakki**

Mentor: Dr. Abhishek Singh  
Creighton University Med Center

#### **Lara Lopes**

Mentor: Dr. Ashley Vavra  
Northwestern Memorial Hospital

#### **Karan Chawla**

Mentor: Dr. Matthew Blecha  
Integrated Vascular Surgery Loyola Medical Center

#### **Lorela Weise**

Mentor: Dr. Matthew Blecha  
Loyola University Medical Center, Integrated Vascular  
Surgery Residency

#### **Ioannis Tsouknidas**

Mentor: Dr. Robert Meisner  
Lankenau Medical Center

#### **Angela Danielle Sickels**

Mentor: Dr. Adam Beck  
University Of Alabama Medical Center

#### **Menna Hegazi**

Mentor: Dr. Nii-Kabu Kabutey  
University of California, Irvine

#### **Isaac Naazie**

Mentor: Dr. Linda Harris  
Buffalo General Medical Center

#### **Irina Kanzafarova**

Mentor: Dr. Michael Stoner  
University of Rochester, Rochester, NY

#### **Falen Demsas**

Mentor: Dr. Nikolaos Zacharias  
Massachusetts General Hospital

#### **Justin Jay Bader**

Mentor: Dr. Cassius Chaar  
Yale New Haven Hospital

#### **Camila Guetter**

Mentor: Dr. Marc L. Schermerhorn  
Beth Israel Deaconess Medical Center



# 6. VQI INTERACTIVE DASHBOARDS

The SVS PSO’s new VQI Interactive Dashboards are an enhanced version of the current VQI Best Practices Dashboards. These interactive dashboards will allow centers to access more up-to-date information in an action-oriented manner when compared to the static quarterly dashboards. Following a pilot launch, the VQI Interactive Dashboard for the Carotid Artery Stent (CAS) registry was released on April 4th 2024 and can be accessed through PATHWAYS under the “Reporting” tab. These new online reports will be rolled out for rest of the VQI registries over the course of 2024 .

Detailed below are some of the updated features (see accompanying Screenshots 6.1, 6.2, 6.3, and 6.4):

ENHANCEMENTS	BENEFITS
1. Access the most recent (refreshed nightly), up to date data	Instantly identify current gaps to strategize operations in a timely manner
2. Select a custom date range to view your center’s data	Readily track and compare historical performance trends
3. Choose different procedural and clinical filter combinations	Track procedure performance across tailored categories
4. Download your center’s data	Perform further internal analysis

The screenshot displays the VQI Interactive Dashboard interface. At the top, there are filter buttons for 'CAS Procedure Type' (set to 'is TFEM'), 'CAS Indication' (set to 'is Asymptomatic'), and 'Procedure Date' (set to '2006/07/01 - 2023/06/30'). A date picker is open, showing a calendar for July 2006 with the 1st highlighted. Below the filters, there are two main data sections: 'Case Data' and 'Neurological Events (at discharge)'. Each section has a table with columns for 'Your Region' and 'VQI Overall'. The 'Case Data' table shows metrics like 'Number of Cases Reviewed' (21) and 'Median Postop LOS (Days)' (1.0). The 'Neurological Events' table lists various stroke types with their respective percentages and VQI scores.

	Your Region	VQI Overall
1 Number of Cases Reviewed	21	NA (-3 Centers)
2 Median Postop LOS (Days)	1.0	NA (-3 Centers)
3 Median Total LOS (Days)	1.0	NA (-3 Centers)

	Your Region	VQI Overall
1 Ipsilateral TIA	4.8% (1/21)	NA (-3 Centers)
2 Ipsilateral Stroke	4.8% (1/21)	NA (-3 Centers)
3 Contralateral TIA	47.6% (10/21)	NA (-3 Centers)
4 Contralateral Stroke	47.6% (10/21)	NA (-3 Centers)
5 Vertebrobasilar TIA	4.8% (1/21)	NA (-3 Centers)
6 Vertebrobasilar Stroke	0.0% (0/21)	NA (-3 Centers)

Powered by iLook

Figure 6.1: VQI Interactive Dashboards enable centers to select custom date range.

## 6. VQI INTERACTIVE DASHBOARDS (CONTINUED)

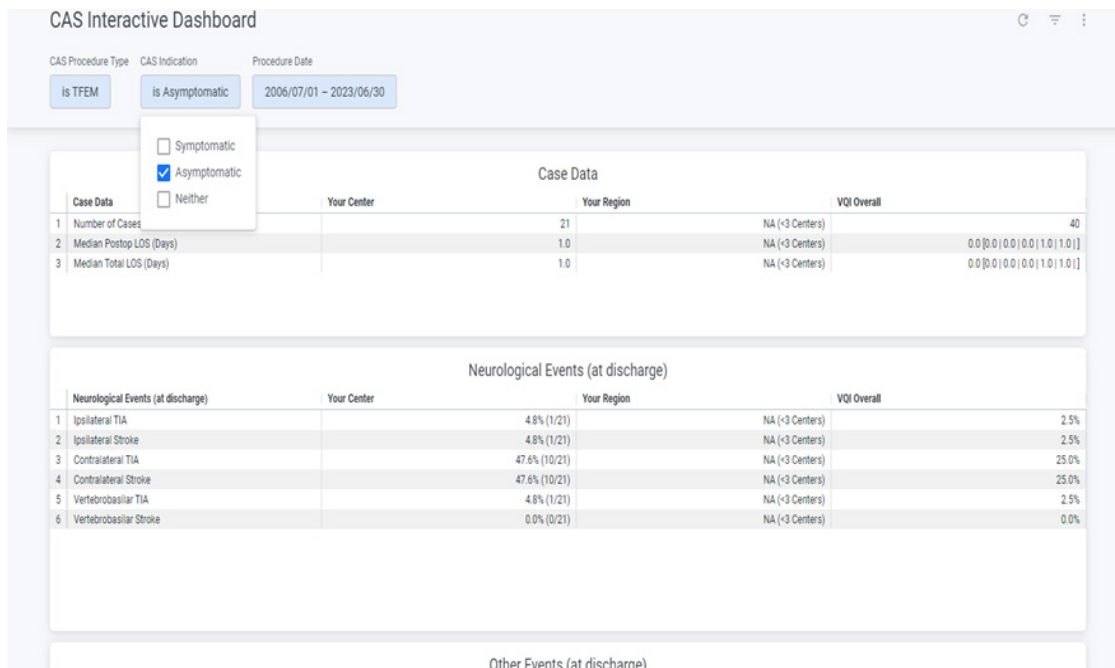


Figure 6.2: VQI Interactive Dashboards enable centers to select different procedural and clinical filter combinations.



Figure 6.3: VQI Interactive Dashboards enable centers to access PRIMPROCIDs associated with a particular event.

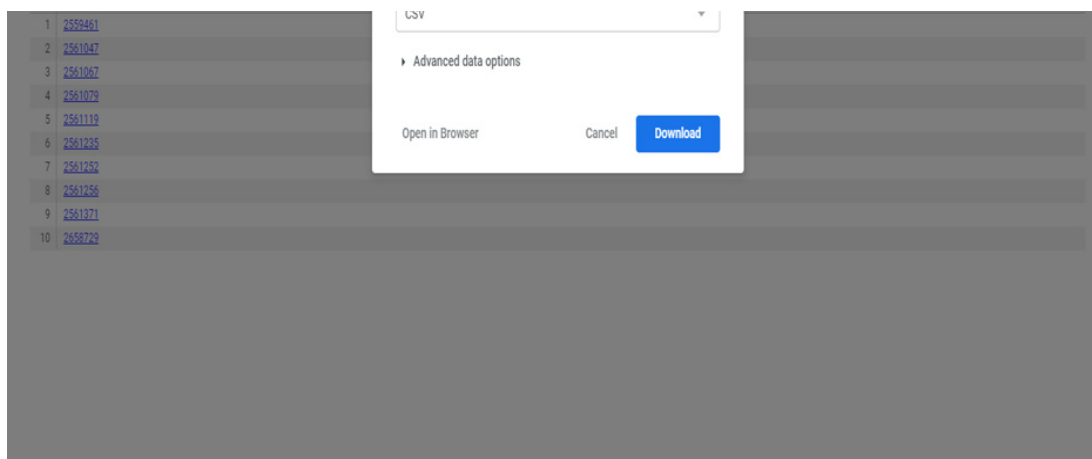


Figure 6.4: VQI Interactive Dashboards enabling centers to access PRIMPROCIDs associated with a particular event.

## 7. REGIONAL QUALITY GROUPS

SVS VQI has 18 regional quality groups based on geographic proximity (Figure 7.1). Regional quality group meetings are an important aspect of SVS VQI and a key component to successful quality improvement. Regional groups distinguish SVS VQI from almost all other registries. Each of the 18 groups hold biannual meetings that provide a forum for discussion on outcomes analysis and work on quality improvement.

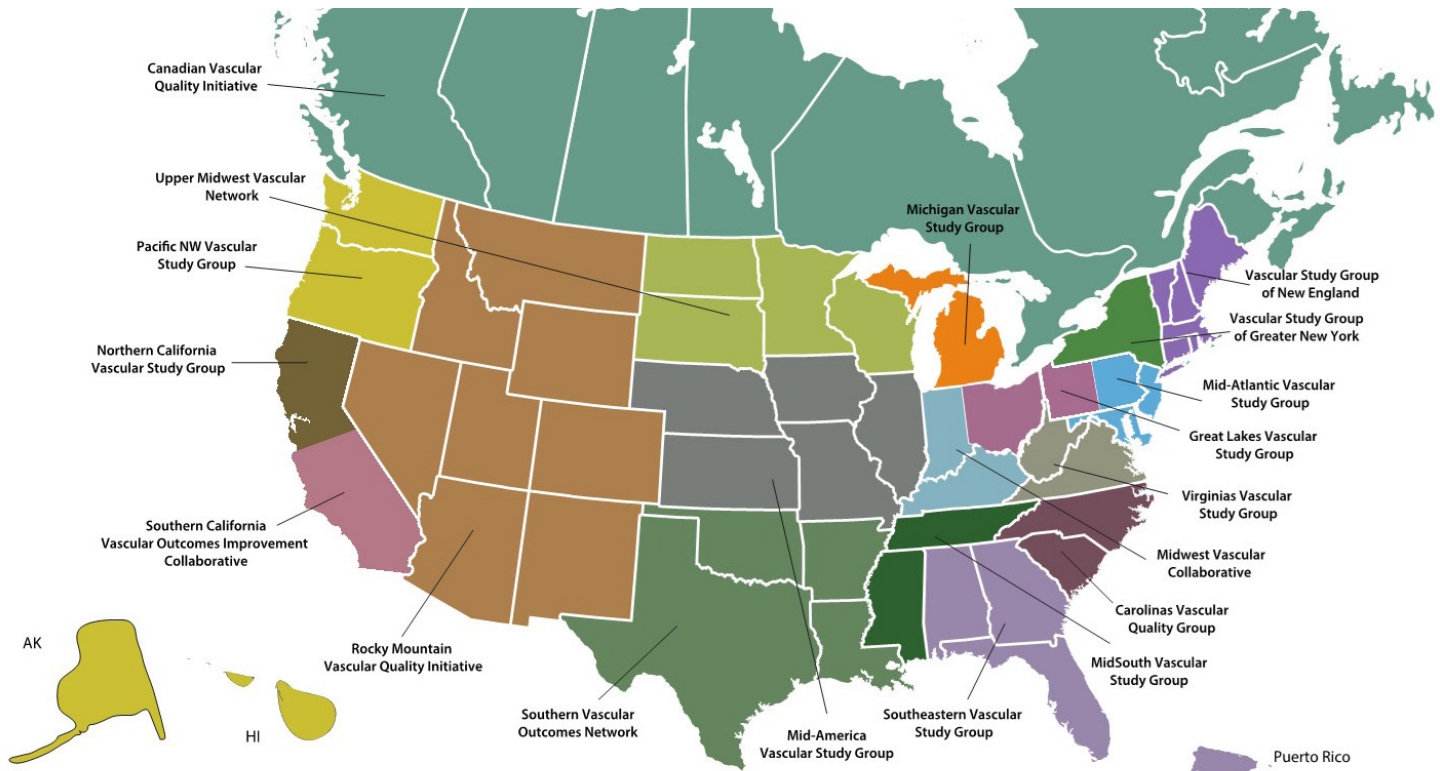


Figure 7.1: SVS VQI Regional Group Map

During each region's bi-annual meeting, data are reviewed and discussed by the members present. Many groups identify an area for improvement and launch region-wide efforts to improve care. Topics that have been addressed include:

- Recording of hemodynamic data (ABI/Toe Pressure) prior to peripheral intervention
- Measuring aneurysm sac diameter one year following EVAR and TEVAR
- Increasing rates of IVC filter retrieval
- Reducing LOS for CEA and EVAR
- Increasing LTFU rates
- Increasing statins and antiplatelet prescriptions at discharge
- In hospital Stroke/Death for CEA, TFEM CAS, and TCAR
- Compliance with SVS EVAR sac size guidelines
- Compliance with SVS Cell-saver guidelines

Some regions have also used "hashtags" to collect unique data for quality improvement:

- Factors contributing to renal failure
- Frailty of Vascular Patients
- Patient Reported Outcomes
- Smoking Cessation
- Causes of Delirium with Vascular Patients
- EVAR SAC diameter size compliance with SVS Guidelines

# 8. QUALITY IMPROVEMENT PROJECTS: LEARNING FROM THE DATA

The SVS PSO encourages centers to submit quality improvement (QI) charters that are based on projects using SVS VQI data. This process has helped the SVS PSO identify groups working on similar initiatives and facilitate networking opportunities. As projects reach completion, the SVS PSO encourages centers to share best practices with the full VQI membership through the several QI resources and tools that are currently offered.

## Quality Improvement Projects

SVS VQI centers work on QI projects which may be selected for presentation at the VQI Annual Meeting. These projects are often related to the National QI Initiatives; however, they can address any vascular topic supported by VQI data. We encourage centers to use their Pathways Dashboards when considering QI projects as well. The SVS PSO provides resources to assist SVS VQI centers with their QI projects.

SVS VQI centers diligently work on and submit quality improvement charters throughout the year. In 2023, there were 116 charters submitted by the identified 18 VQI regions. Of these 116 charters, 2% were Hashtag, 40% were Regional, and 58% were Center charters.

## Quality Improvement Tools

The SVS PSO, together with Fivos, develops QI tools to assist VQI members, data managers, vascular nurses, quality improvement staff, and hospital administrators with their own vascular quality programs. These tools include:

- Presentations
- Webinars/Events
- VQI Annual Meeting
- QI Supplemental Guide
- Toolkits
- Educational Videos/Audio
- Sample Charters
- Case Studies
- 1:1 Mentoring

- SVS VQI Annual Summary Report
- QI Annual Abstract Guide
- Annual Rapid Fire Abstract Guide

\*Some tools are within members only section

## Participation Awards

The SVS PSO encourages provider and center engagement through a program of annual Participation Awards. Participation Awards are given based on four domains that include: long-term follow-up rates, regional meeting participation, quality improvement initiatives, and registry participation. Certificates are distributed to centers receiving the maximum award level at the national meeting. All award levels are acknowledged during regional meetings. Marketing guidelines for displaying Participation Awards can be found on the VQI website. Participating centers can earn up to three stars based on the following criteria of the four domains:

- The completeness of long-term, follow-up reporting (LTFU) based on the percentage of patients for whom they have at least nine months of follow-up data
- Attendance at semi-annual meetings of a regional quality group and VQI@VAM
- Initiation of quality improvement activities based on VQI data
- The number of vascular registries in which the center participates

SVS VQI centers diligently work on and submit quality improvement charters throughout the year. In 2022, there were 113 charters submitted by the identified 18 VQI regions (Figure 8.1). Of these 113 charters, 3% were Hashtag, 22% were Regional, and 75% were Center charters. (Figure 8.2)

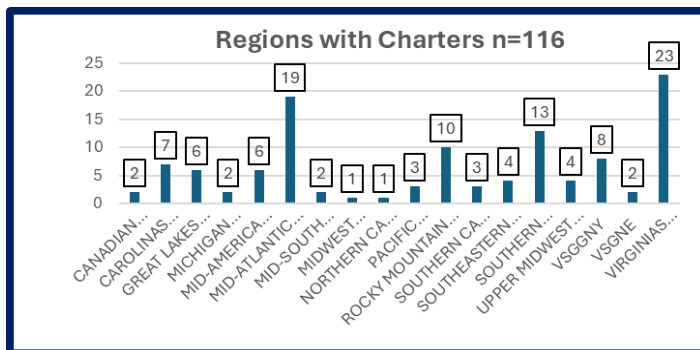


Figure 8.1 – Quality Improvement Projects Submitted in 2023

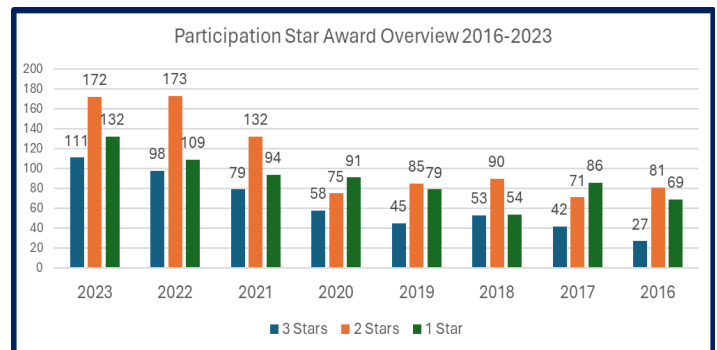


Figure 8.2 – Quality Improvement Charter Types

# 9. NATIONAL QUALITY IMPROVEMENT INITIATIVES: OPTIMAL DISCHARGE MEDICATIONS, EVAR LONG-TERM FOLLOW-UP IMAGING, AND SMOKING CESSATION

The SVS PSO chose to focus on Discharge Medications, EVAR Follow-up Imaging, and Smoking Cessation because these quality measures have been shown to increase long-term survival rates for vascular patients. Previous work by De Martino et al (J Vasc Surg, 2014 Jun;59(6):1615-21) demonstrated that patients undergoing major arterial procedures have a 25% improvement in 5-year survival if they are discharged on an anti-platelet agent and a statin. Long-term follow-up imaging is essential after EVAR to determine the success of the procedure, defined by exclusion of the aneurysm without significant endoleak or continued sac enlargement. Studies show that patients who quit or don't smoke have better outcomes and better survival rates.

Tracking the performance of individual medical centers on these measures allows our members to use their data for successful QI initiatives.

To support these initiatives, the SVS PSO continues to provide quality improvement (QI) webinars, focused charter webinars, newsletters, regional meetings, and reports to assist you, our members, in analyzing your data, defining the problem, developing a plan (charter), implementing a process, and evaluating your outcomes. Many of you have created charters on D/C Medications, EVAR LTFU Imaging, & Smoking Cessation and are in the process of implementing your processes. These initiatives are discussed in detail at regional meetings.

The VQI overall DC medication rate was 88% in 2023. In fact, most of the identified 18 VQI Regions have stabilized and the SVS PSO have decided that this NQI, although still important, will be termed as in 'maintenance mode'.

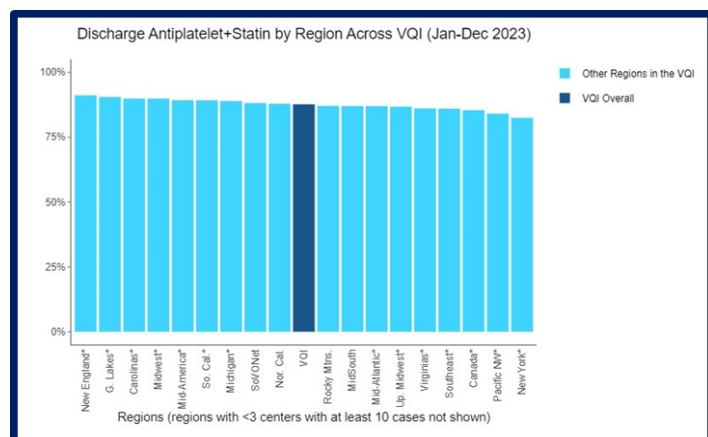


Figure 9.1 – Discharge Medications and Statin Rate for SVS VQI Hospitals

Since EVAR imaging is a long-term follow-up measure, rates are not calculated until two years after the date of operation to allow centers adequate time to capture and enter LTFU. The goal is for 100% of EVAR patients to have imaging at one year. VQI overall LTFU for 2020 was at 79%, and VQI overall LTFU for 2021 was at 76%. We still have room for improvement to reach our goal.

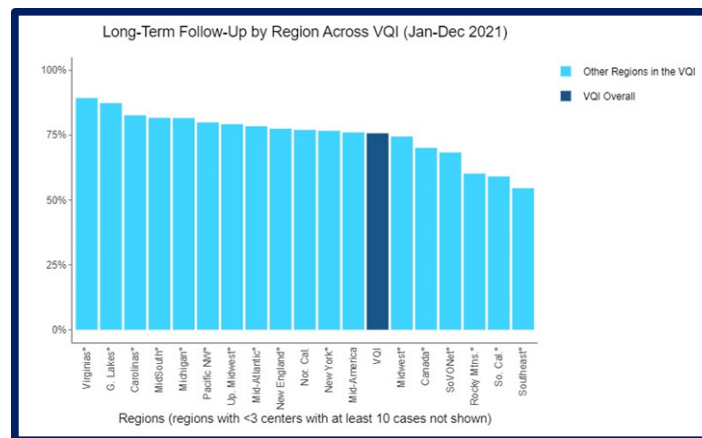


Figure 9.2 – Long-Term Follow-Up by Region

As of June 2023, we added a new National Quality Initiative of Smoking Cessation. Two additional quality measures were incorporated into the 2023 Spring Reports. Those included Preoperative Smoking and Smoking Cessation.

Preoperative Smoking includes all elective procedures for arterial registries. Inclusion criteria is the percentage of those procedures where the patient was still smoking within one month of the procedure. For 2023, the VQI overall preoperative smoking rate was 29%.

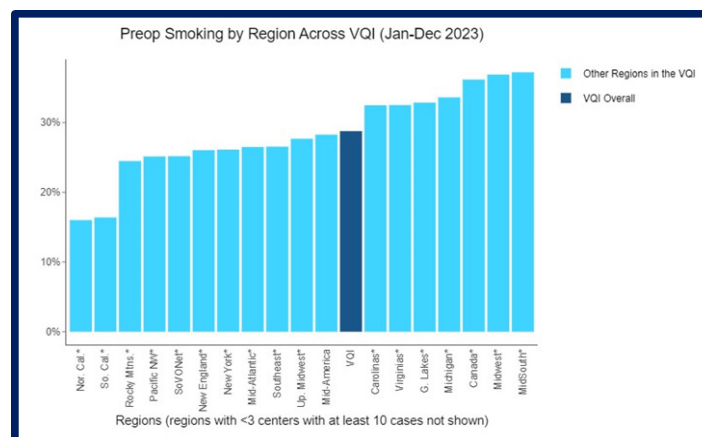


Figure 9.3 – Preop Smoking by Region



## 9. NATIONAL QUALITY IMPROVEMENT INITIATIVES: OPTIMAL DISCHARGE MEDICATIONS, EVAR LONG-TERM FOLLOW-UP IMAGING, AND SMOKING CESSATION

Smoking Cessation at follow-up measure, rates are not calculated until two years after the date of operation to allow centers adequate time to capture and enter LTFU. This measure includes all elective, urgent, and emergent procedures for arterial registries performed on patients still smoking within one month of the procedure. It excludes procedures that do not have at least one long-term follow-up record where the patient’s follow-up smoking status was recorded. For 2021, the VQI overall smoking cessation rate was 32%.

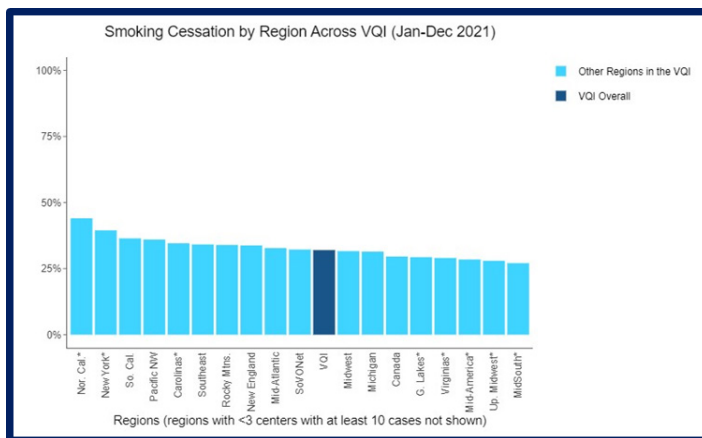


Figure 9.4 – Smoking Cessation by Region

Since adding the new National Quality Initiative Smoking Cessation in June 2023, there have been additional webinars, toolkits, and education provided over the past year. SVS and VQI in collaboration have aligned their websites to offer smoking cessation education for clinicians and patients. Please visit [www.vqi.org](http://www.vqi.org) or <https://vascular.org/> for more information and multiple resources.

With the various resources and support provided to you, our members, together, we can reach our goal for each of these initiatives.

## 10. SVS PSO DATA INTEGRITY AUDITS

In 2019 the PSO started the first phase of the source data audits. Source data audits play a crucial role in ensuring accuracy, consistency, and reliability of data. These audits help identify and rectify areas in need of improvement with data element or help text, ultimately improving operational efficiency, enhancing decision-making processes. Moreover, by demonstrating a commitment to data integrity through independent audits, the PSO can build trust and transparency among stakeholders. This assurance of accurate, secure, and trustworthy data can lead to improved relationships and increased confidence in the data.

The journey of the source data audits underscores their importance. In the initial phases (2019 and 2020), a third-party vendor was employed to review completed data forms for abstracted variable matches across multiple centers and registries. Although these centers did not receive center-level reports, the information gathered was instrumental in the discovery process and for deriving lessons learned. As the program progressed to its current phase, we again utilized a third party vendor, we now have included a more extensive sample size of 100 randomly selected centers with approximately 10 records each. This phase focused on a specific registry, CAS, limiting procedures to those performed in 2022. Notably, centers previously involved in Phases I and II were excluded from Phase III, as were those selected for full claims validation in 2022.

We were thrilled with the results. Out of the 76,358 total analytically appropriate data elements re-abstracted for the 2023 audit of 2022 CAS procedures, 67,396 elements matched between the participant and auditor, resulting in an 88% raw match rate at the data element level. Once the data was reviewed, the overall data match rate was 90.63%. This progression illustrates the evolution and significance of source data audits in maintaining high-quality, reliable data within our registries.

# 11. SVS VQI SYSTEM QUALITY REPORT

In Fall 2024, the SVS PSO will be introducing a new benchmark report at the hospital system level, produced semi-annually (Spring and Fall). This report will follow a similar structure to the semi-annual VQI Regional Quality report, including the same 30+ peri-operative and long-term outcomes selected by SVS PSO registry committees. This report will provide targeted, comparative results and benchmarks to VQI overall for these procedures, process measures, and complications (Figure 1). The report will be shared only with system level executives and include identified center information (Figure 2). Additionally, there will be an appendix at the end of each report showcasing the system's case volumes for each individual report as well as the number of centers contributing data.

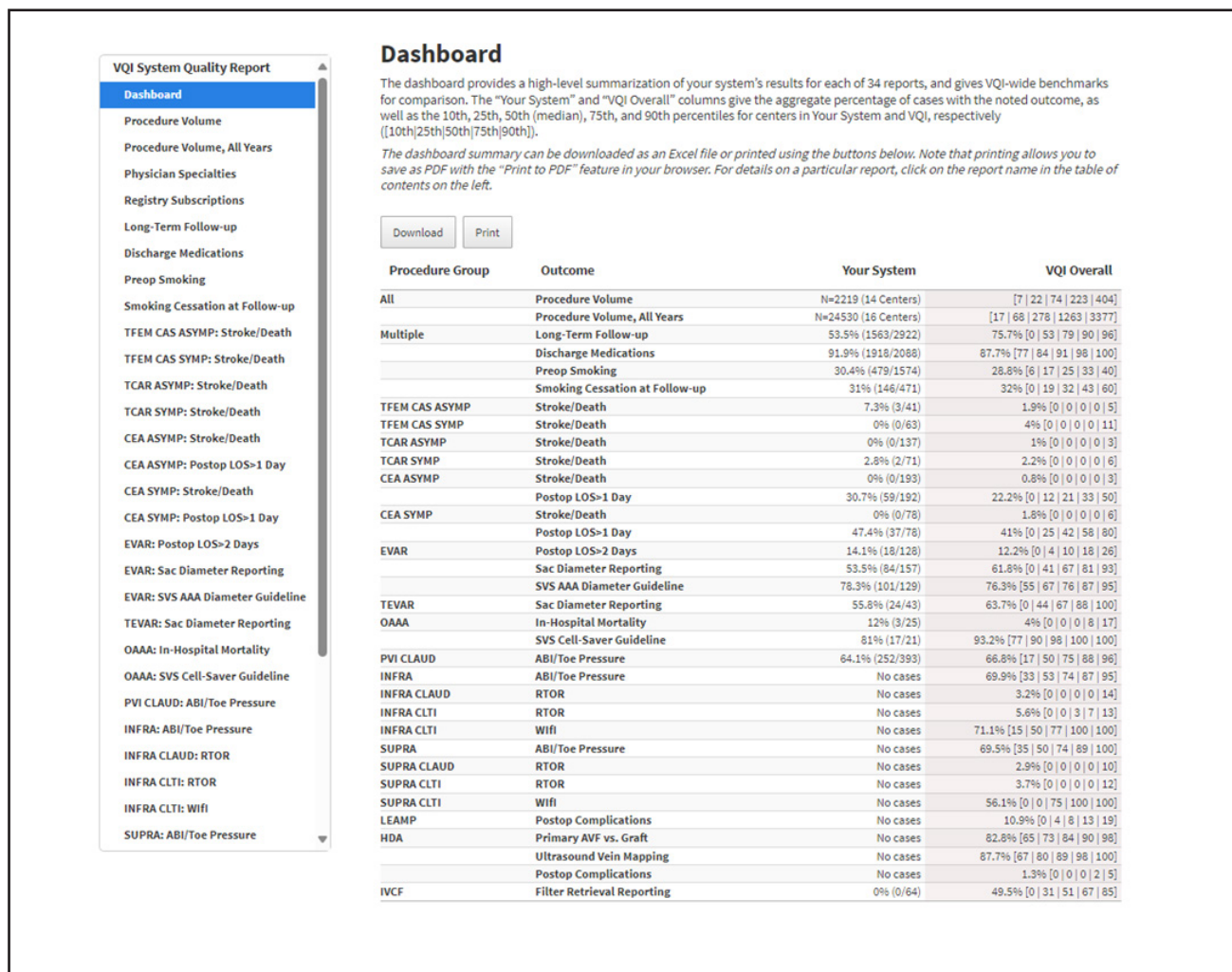


Figure 11.1: Dashboard Summary of System Reports

# 11. VQI SYSTEM QUALITY REPORT (CONTINUED)

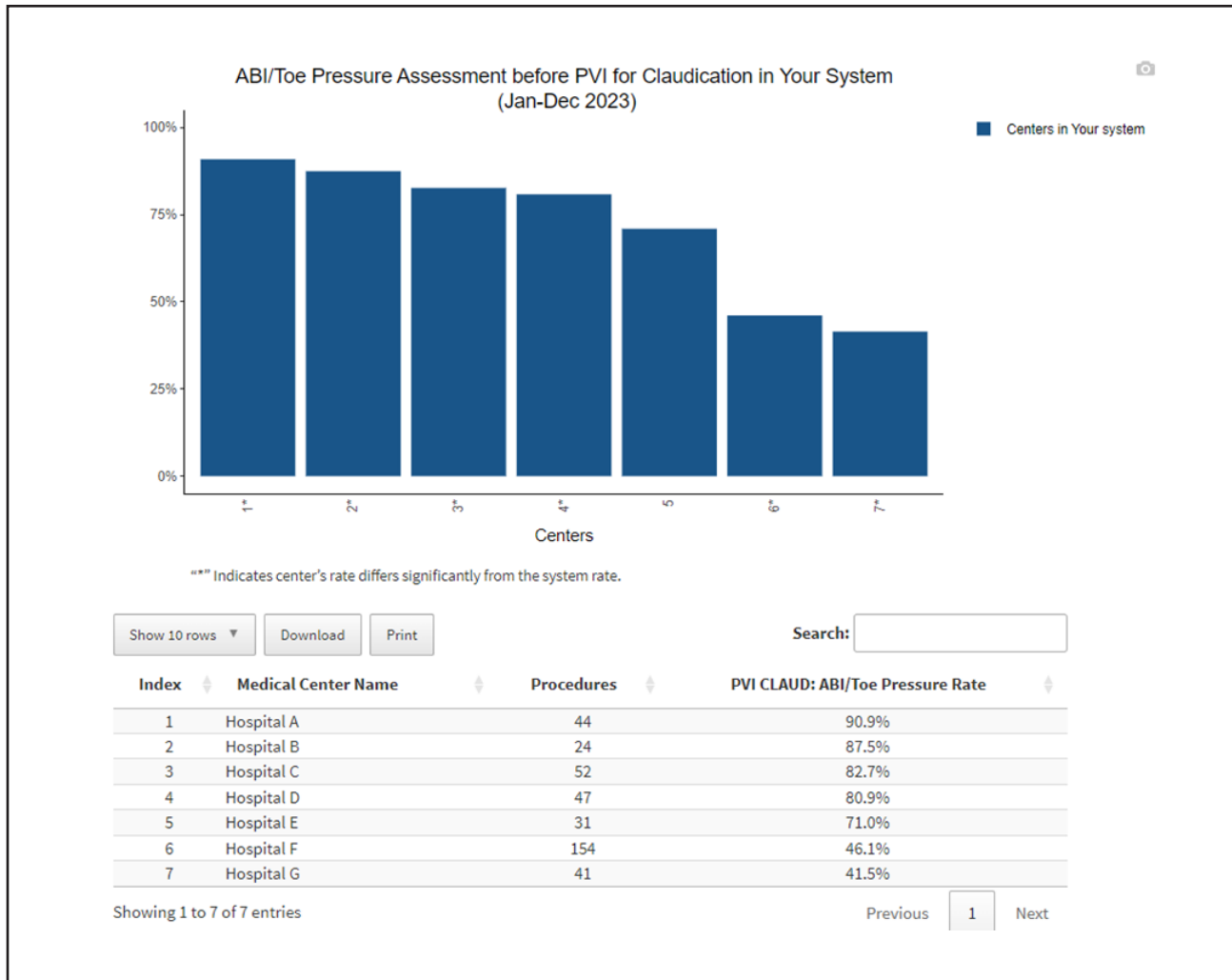


Figure 11.2: Dashboard Summary of System Reports

## 12. SVS VQI DATA ANALYSIS

SVS VQI physicians may request de-identified datasets from each registry for analysis. The SVS PSO Research Advisory Council reviews and evaluates requests for datasets by investigators, who provide the RAC a description of their proposed project. As of the end of April 2023, the RAC has approved over 1,000 projects, and of those, 695 have been published in peer-reviewed journals.

The SVS VQI Vascular Implant Surveillance and Interventional Outcomes Network (VISION) is a partnership between the SVS VQI and the Medical Device Epidemiology Network (MDEpiNet) that directly supports the mission of the SVS VQI. VISION links SVS VQI registry data to Medicare claims to generate novel registry-claims linked datasets. The datasets combine the granular clinical detail from the SVS VQI with discrete long-term outcomes derived from Medicare claims. VISION data is used to generate center-specific feedback reports called, Survival, Reintervention and Surveillance (SRS). Each report shows each center's long-term performance when compared to the VQI for Medicare patients undergoing the following procedures:

- Endovascular abdominal aortic aneurysm repairs (EVAR)
- Elective abdominal aortic aneurysm repair (EVAR + Open AAA)
- Carotid endarterectomy for asymptomatic stenosis
- Carotid artery stent procedures (TCAR and transfemoral procedures) for asymptomatic stenosis

Use of the data is governed by a Data Use Agreement (DUA) between Weill Cornell Medical College and the Center for Medicaid and Medicare Services (CMS). VISION replaces the previous Medicare-Match data process.

Visit <https://www.vqi.org/data-analysis/> for everything you need to learn about blinded dataset request policies and procedures, view already approved projects for possible collaboration, and more.

## 13. SVS CLINICAL PRACTICE GUIDELINES AND THE SVS VQI

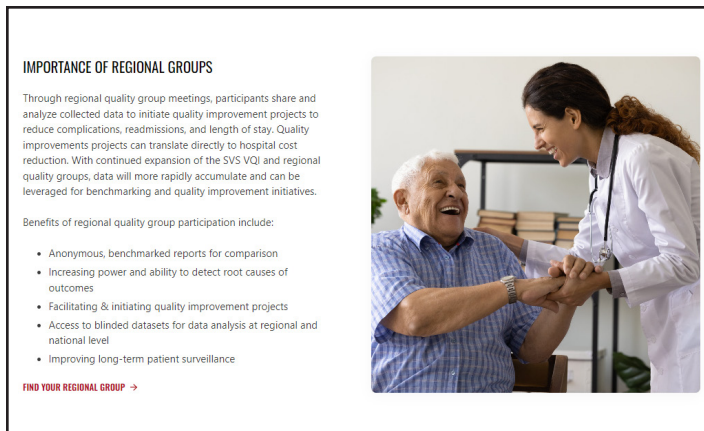
Professional societies write clinical practice guidelines to improve care and reduce practice variation. A few years ago, the SVS Document Oversight Committee asked VQI to assess practitioner compliance with guidelines and adoption over time. VQI was able to measure adherence to guidelines as well as correlating guideline compliance with outcomes. Subsequently two analyses of guideline compliance have been done on AAA and carotid disease. Vascular Quality Initiative assessment of compliance with Society for Vascular Surgery clinical practice guidelines on the care of patients with abdominal aortic aneurysm was published in the September 2020 issue of the JVS (VASCULAR QUALITY INITIATIVE ASSESSMENT OF COMPLIANCE WITH SOCIETY FOR VASCULAR SURGERY CLINICAL PRACTICE GUIDELINES ON THE CARE OF PATIENTS WITH ABDOMINAL AORTIC ANEURYSM. Eldrup-Jorgensen J, Kraiss LW, Chaikof EL, Neal D, Forbes TL. J Vasc Surg. 2020 Jan 20). Participation in the VQI registry was shown to provide an objective assessment of performance and compliance with guidelines. Compliance with recommendations was associated with improved outcomes and was encouraged for providers. VQI provider and center reports may be used as a focus for quality improvement efforts.

During the past year, another analysis has been done on compliance with treatment for extracranial cerebrovascular disease CPG, (VASCULAR QUALITY INITIATIVE ASSESSMENT OF COMPLIANCE WITH SOCIETY FOR VASCULAR SURGERY CLINICAL PRACTICE GUIDELINES ON THE MANAGEMENT OF EXTRACRANIAL CEREBROVASCULAR DISEASE. Marcaccio CL, AbuRahma AF, Eldrup-Jorgensen J, Brooke, BS, Schermerhorn ML. J Vasc Surg. 2023 Mar 20;S0741-5214(23)00471-8. doi: 10.1016/j.jvs.2023.03.026.). Compliance with these recommendations was associated with improved outcomes after carotid revascularization. This finding confirmed the value of guideline compliance. Optimization of VQI data to promote evaluation of guideline compliance and distribution of these findings to VQI centers and providers will help facilitate quality improvement efforts in the care of vascular patients. VQI continues to collaborate with the SVS Document Oversight Committee to analyze compliance with SVS clinical practice guidelines.

## 14. VQI.ORG EXPERIENCE

### VQI Website

The [VQI Website](#) offers a clean and intuitive layout, designed for effortless navigation. With its wealth of resources, from articles to multimedia content, this website seeks to provide an enriching user experience.




**IMPORTANCE OF REGIONAL GROUPS**

Through regional quality group meetings, participants share and analyze collected data to initiate quality improvement projects to reduce complications, readmissions, and length of stay. Quality improvements projects can translate directly to hospital cost reduction. With continued expansion of the SVS VQI and regional quality groups, data will more rapidly accumulate and can be leveraged for benchmarking and quality improvement initiatives.

Benefits of regional quality group participation include:

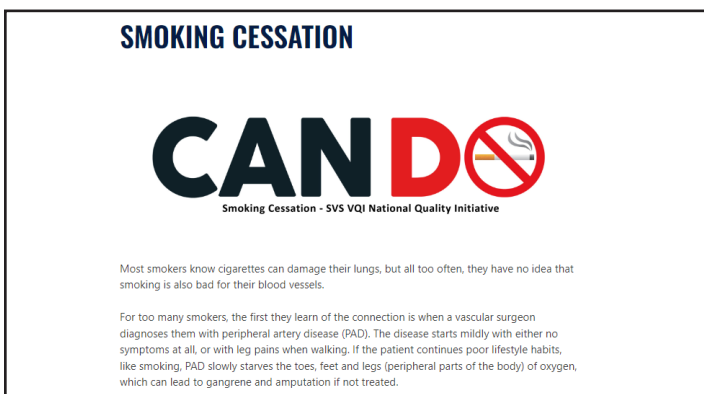
- Anonymous, benchmarked reports for comparison
- Increasing power and ability to detect root causes of outcomes
- Facilitating & initiating quality improvement projects
- Access to blinded datasets for data analysis at regional and national level
- Improving long-term patient surveillance

[FIND YOUR REGIONAL GROUP →](#)




### Website Features

Some of our favorite aspects of the VQI website include: webpages dedicated to each of the 14 different VQI Registries, consistency among the Regional Group pages, more robust search capabilities, a streamlined Members Only area, a calendar of upcoming webinars and events, information about our Quality Initiatives, FIT Trainee Program and much more!



**SMOKING CESSATION**

**CAN DO** 

Smoking Cessation - SVS VQI National Quality Initiative

Most smokers know cigarettes can damage their lungs, but all too often, they have no idea that smoking is also bad for their blood vessels.

For too many smokers, the first they learn of the connection is when a vascular surgeon diagnoses them with peripheral artery disease (PAD). The disease starts mildly with either no symptoms at all, or with leg pains when walking. If the patient continues poor lifestyle habits, like smoking, PAD slowly starves the toes, feet and legs (peripheral parts of the body) of oxygen, which can lead to gangrene and amputation if not treated.

### Members Only Area

The Members Only area of the VQI Website has also been redesigned. If you do not have a login, please reach out to Jen Correa, [jcorrea@svspso.org](mailto:jcorrea@svspso.org) (please note you will need different credentials than your PATHWAYS login). With Members Only, users have access to resources such as VQI@VAM recordings, certain webinar recordings, and much more. Please note that this login is different than your PATHWAYS user account.

## 15. SVS VQI COMMUNICATIONS

In addition to the new website, the SVS VQI has made many efforts to improve on the methods to disseminate information to VQI participants and other stakeholders. Here are just some of the ways, we are helping to get information into your hands.

### Monthly VQI News

The monthly VQI Newsletter is your source for all things VQI. The newsletter contains information about upcoming events, PATHWAYS announcements, VQI@VAM information, where to access webinars and recordings, and many other important details.

### Follow Us On LinkedIn

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

### FDA Notifications

As a Patient Safety Organization, we share Safety Notifications with VQI Members: FDA will contact the SVS PSO with Safety Notifications it wants us to communicate. Safety Notifications will appear in both the PSO and SVS newsletters. All Safety Notifications are posted to the VQI and SVS Websites: <https://www.vqi.org/resources/fda-communication/>

### Regional Group Meetings

Regional Group Meetings are a great source of information for VQI members. Information about each Regional Group meeting can be found on the individual Regional Group pages. On each page, you will find meeting invitations, details about meeting location, links to minutes and presentations, etc... Additionally, we are sending emails via Mailchimp with invitation information.

### Quality Improvement Calls/Webinars

Betsy Wymer, SVS VQI Director of Quality, hosts quarterly Quality Improvement Calls and Quality Improvement Webinars. Registration links for these events can be found on the [VQI website](#).

### Email Communications

We know email fatigue is real. We try not overloading you with emails, but sometimes, that is simply the most direct and efficient way of getting you the information you need. Once you sign up for the VQI and have access to PATHWAYS, you will automatically receive emails. If you are not receiving emails from us, there is a chance that your facility may have a firewall preventing messages from getting through. Emails we send come from either Vascular Quality Initiative or PATHWAYS Support.



## 16. COLLABORATION WITH SOCIETIES

Although VQI was begun by vascular surgeons, less than 50% of the current membership in SVS VQI are vascular surgeons. There is a broad multi-disciplinary participation in the SVS VQI, which includes physicians from Cardiology, Radiology, General Surgery, Cardiothoracic Surgery, Neurology, Neurosurgery and other specialties. Recognizing this fact, the SVS VQI has fostered working relationships with many of the societies that represent these various specialties to help inform and promote the registries. The SVS VQI's governing council and registry committees also include volunteers from these different disciplines.

The SVS VQI would like to recognize and thank the following Societies for their ongoing involvement with the SVS VQI. The expertise and guidance provided by our colleagues has been instrumental to the success of VQI:

- American College of Cardiology
- American Venous Forum
- Society for Vascular Medicine
- Society for Vascular Nursing
- Society for Vascular Ultrasound
- Vascular Access Society of the Americas



### AMERICAN COLLEGE OF CARDIOLOGY (ACC)/NCDR

The American College of Cardiology and Society for Vascular Surgery have moved to a single vascular registry to harness the strengths of both organizations in improving care and outcomes of patients with vascular disease.

The ACC NCDR Peripheral Vascular Intervention (PVI) registry has been operated by SVS since January 1, 2021, creating a co-branded VQI program that is a unique and comprehensive resource for measuring and improving the care provided to a growing population of patients with vascular diseases.

The new registry collaboration provides greater opportunities to evaluate new and emerging technologies, pharmacologic therapies, and medical and lifestyle management. It also provides a rich source of data for academicians, the FDA and industry looking to answer scientific questions about patient characteristics and outcomes and the use and effectiveness of different treatments.

The ACC holds seats on SVS PSO committees and councils, and collaborates with the PSO on Quality Improvement education.

Over 60 former NCDR PVI sites now participate in VQI. Participants who have not yet joined the SVS VQI, may contact the SVS VQI account team by emailing [vqi@fivoshealth.com](mailto:vqi@fivoshealth.com), or by calling 603-298-0263, to begin enrollment.



### SOCIETY FOR VASCULAR MEDICINE

The SVS VQI and the Society for Vascular Medicine (SVM) collaborated on the Vascular Medicine Consult (VMC) Registry, which launched in 2020. The Registry targets new patients who are being treated medically for Atherosclerotic Carotid Artery Occlusive Disease, Abdominal Aortic Aneurysm, and Peripheral Lower Extremity Arterial Disease due to atherosclerosis. Medication details and dosages, risk factor and lifestyle modifications, non-operative treatments and counseling will be the emphasis of the VMC. The Registry also helps define the natural history of disease and the impact of medical management. Features include a web-based platform with real-time reporting.

This team effort represents an opportunity to leverage the strengths of both organizations to improve care delivered to patients with vascular disease in the outpatient populations as well.



American Venous Forum  
Promoting venous and lymphatic health





## American Venous Forum

### AMERICAN VENOUS FORUM

The Society for Vascular Surgery® Vascular Quality Initiative® (SVS VQI) and the American Venous Forum (AVF) are pleased to collaborate in the treatment of venous disease.

With more than 20 percent of the adult population suffering from chronic venous diseases, AVF is committed to expanding its efforts through the VQI to assess the efficacy of various treatments for patients with venous disease. AVF and SVS have positioned themselves as leaders in vascular quality improvement by providing a platform for their members to analyze outcomes, determine best practices, and collaborate on quality improvement efforts across regions.

The VQI and AVF worked together to launch the Varicose Vein Registry in 2014 and the Venous Stent Registry in late 2019. As part their collaboration with VQI, AVF thought leaders serve as volunteers on the committee that worked on creating and enhancing both registries, including participation on the Venous Research Advisory Committee (RAC). Additionally, the VQI participates in registry education sessions at the AVF annual meeting.

The Varicose Vein Registry captures procedures performed in vein centers, office-based practices, and ambulatory or inpatient settings and includes therapies such as thermal radiofrequency ablation, thermal laser ablation, mechanochemical ablation, chemical ablation, embolic adhesive ablation, and surgical ablation (including high ligation, stripping, and phlebectomy). The Venous Stent Registry treats patients with symptomatic venous obstructions due to chronic thrombosis and/or some venous compression disorders.

### INTERNATIONAL CONSORTIUM OF VASCULAR REGISTRIES (ICVR)

The ICVR was launched in November 2014 at Cornell University as a partnership of VQI, VASCUNET and other registries that include over 12 national registries, the FDA, manufacturers, and other stakeholders. The mission of the International Consortium of Vascular Registries (ICVR) is to provide a collaborative platform through which registries and other stakeholders around the world can share data to improve vascular health care. In order to create this collaborative platform, the ICVR is leveraging existing national registries, including the Society for Vascular Surgery Vascular Quality Initiative (VQI) and Vascunet, a vascular registry collaboration within the European Society of Vascular Surgery which involves national and regional vascular registries from Europe, Australia and New Zealand.

## 17. SYMMETRIC SOLUTIONS

In July 2022, SVS VQI launched a partnership with Symmetric Health Solutions—a medical device software company that works with more than 750 US and OUS hospitals, with over 15 million devices/products, and over 400 attributes—to more accurately identify healthcare supply chain and medical device data. Ultimately, this partnership afforded SVS VQI access to reliable, accurate UDI (Unique Device Identification) -based device information when it is needed most for patient safety and clinical care.

Symmetric offers a device data platform to improve the completeness and accuracy of existing Access Global Medical Device Nomenclature (GMDN) data and offer data on products that are not currently available in AccessGUDID. Symmetric leverages machine learning, natural language processing, and optical character recognition technology to create a single source of truth for medical device data, including vascular devices. The Fivos redesigned PATHWAYS platform “Device Assist” integrates the Symmetric device data feed into Device Assist, providing users with access to near real-time device data and increasing the accuracy of the details captured in the registry.

The partnership with Symmetric eliminates manual maintenance by SVS VQI and registry providers to add new devices to the clinical registry and maintain and update existing records. It also increases the number of device attributes that can be captured, enhancing patient safety, and expanding opportunities for research. Some customer feedback includes “Genius”, “Kudos on a great update”, and “Brilliant”.

“A useful retrospective return on data can only be realized with factual data. Data abstractors left to make judgment calls on device characteristics open a data registry to the entry of non-factual data. PVI Device Assist enables data abstractors to enter factual data. Research driving quality, based on facts, holds manufacturers to continual quality improvement, which benefits patients. PVI Device Assist bolsters the abstractor’s desire to enter factual data and quickly at that—with entry of a few manufacturer numbers, device characteristics are returned in full.” - Springfield Memorial Hospital

## 18. USING SVS VQI DATA FOR COLLABORATIVE PROJECTS WITH FDA AND INDUSTRY

Medical devices are an integral component of vascular healthcare. VQI clinical data can help better understand device performance. Real world data may be used to meet regulatory requirements, support post-approval surveillance or expand existing indications for use (IFU).

### Post-Approval Surveillance Projects

The use of VQI data for post-approval surveillance is consistent with the FDA vision of using real world evidence and registry-based evaluation throughout the total product lifecycle. Initial projects have leveraged existing SVS VQI infrastructure and reduced recruitment time and expenses. For example, the recruitment for the Thoracic EndoVascular Aortic Dissection (TEVAR) project (see below) was completed in half the time initially estimated by industry sponsors, Medtronic and Gore.

SVS VQI has partnered with several device manufacturers to provide aggregate data for product development, creation of performance standards, and expansion of device indications:

### TEVAR Post-Approval Surveillance Projects

The VQI TEVAR for Type B Aortic Dissection project began in 2014 with retrospective collection of data to include the date of FDA approval for the Medtronic and Cook devices in 2013. Patient enrollment was rapid and all planned patients have been enrolled for each device and are now greater than 5 years out from their procedures. 5-year data for these patients will be presented to the Steering Committee of the project at the SVS VAM with a planned publication shortly afterwards.

Cook Medical received market approval for their dissection devices in 2019 and have enrolled all patients in the chronic dissection arm of the project. The acute dissection arm is still enrolling with a requirement for use of both components of the Cook Dissection system. Once data are collected for these patients, an aggregate analysis of all patients will be performed. There are a number of ongoing sub-studies within the project, including an assessment of TEVAR performance in patients with "high-risk" anatomic/clinical features based on the SVS/STS reporting guidelines, an assessment of patient characteristics in the post-approval project versus similar patients within the MDT/Gore Pivotal studies, and the five-year outcomes of patients from the original study cohort.

For more information, please contact: [tevarproject@m2s.com](mailto:tevarproject@m2s.com)

### Transcarotid Artery Revascularization (TCAR) Surveillance Project

The TCAR Surveillance Project (TSP) was designed to

study the efficacy of TCAR in comparison with the standard of care, CEA. Reimbursement for TCAR procedures on high risk patients in the TSP was approved in 2016, by the Centers for Medicare and Medicaid Services (CMS) under the current National Coverage Determination.

In 2022, the FDA issued an Approval For The Expansion Of The Indications For Use To Include Treatment Of Patients At Standard Risk For Adverse Events From Carotid Endarterectomy. Last year, CMS expanded coverage for carotid stenting on select patients requiring a formal shared decision making interaction and independent neurologic assessment. These requirements can be obviated by participation in the TSP.

For more information on the TCAR Surveillance Project, please see [Clinical Trials.gov](https://clinicaltrials.gov/ct2/show/NCT02850588): <https://clinicaltrials.gov/ct2/show/NCT02850588>

### FDA PANEL ON TYPE III ENDOLEAKS AND REAL WORLD EVIDENCE

The US Food and Drug Administration (FDA) convened a two-day panel in November, 2021 to review the performance of endovascular aortic stent grafts and real-world evidence. The FDA panel expressed concern about the real world data that is available for evaluation and surveillance of endovascular aneurysm repair (EVAR) devices. The panelists recommended strengthening EVAR surveillance and data collection recognizing that it would require a change in culture and additional support.

**IMPROVING PATIENT CARE** – The IFU for EVAR devices and SVS clinical practice guidelines recommend annual scans following EVAR. Current compliance in clinical practice with annual follow up is poor. Numerous reports have shown that less than half of patients undergo recommended imaging post-EVAR putting patients at risk for undetected endoleaks, aneurysm rupture and aneurysm-related mortality. Clearly, providers and patients need more motivation to comply with the guidelines regarding follow up. Lack of compliance with scanning results in poor patient care and lack of evidence for evaluation of device performance and regulatory guidance.

**IMPROVING DATA COLLECTION** – The primary message from the FDA panel is the increased risk of type III endoleaks from certain devices and the lack of adequate data for analysis. Since the panel, VQI, VISION, FDA, Kaiser Permanente, and industry partners have been working together to develop a real world EVAR surveillance mechanism to identify outcomes of interest. Working together, this collaborative group developed the LEAF (Long term EVAR surveillance and Follow up) proposal which harnesses the clinical details of VQI data with the long term follow up of VISION to measure real world device performance with appropriate comparators.

## **VASCULAR RESEARCH COLLABORATIVE (VRC) –**

The BEST-CLI trial has shown the value of a randomized clinical trial (RCT) to generate high quality evidence. A registry-based RCT leverages the preexisting infrastructure of a registry to efficiently collect data and provide real world evidence. A subset of VQI centers (40-50) could be selected based on volume, quality of data entry, site variety (academic, teaching, community, urban, rural, etc) and patient diversity (Under Represented In Medicine) to ensure appropriate representation. These sites, a tiered subset of VQI centers, could provide annual follow up for 5-10 years. A task force is being organized to explore the feasibility of a registry-based RCT and to encourage further trials.

**VQI VISION** – An existing program called the VQI Vascular Implant Surveillance and Interventional Outcomes Network, or VQI-VISION, has linked Medicare patients in the VQI registry to their Medicare claims, and may be a feasible next step forward to improve data collection after EVAR. This partnership, in collaboration with the FDA-funded Medical Device Epidemiology Network (MDEpiNet), allows the coordinated registry network (CRN) formed by linking VQI patients to their own Medicare claims to measure long-term outcomes after EVAR. Data from VQI-VISION has been used to examine five and ten-year outcomes after EVAR, including survival, the need for reintervention, and device surveillance. During the panel discussion, the group discussed using data from VQI-VISION to create long-term, device-specific Device Dashboards, which would provide surgeons, regulators, and industry stakeholders long-term outcomes data for device evaluation and surveillance.

FDA needs better data to evaluate safety and efficacy. Industry needs better data for device evaluation and improvement. Our patients need the best devices and the best care. Via VQI, VRC or VISION, VQI can provide the infrastructure to provide high quality evidence to guide patient care.

## **19. THE SVS VQI AND MEDICAL DEVICE EVALUATION**

Increasing attention is being focused on the safety and effectiveness of medical devices after they have been approved and are in general use. In most cases, devices are approved based on their performance in a narrow cohort of patients treated at centers of excellence according to strict inclusion criteria. In practice, however, a broader group of patients is often treated with an approved device, not always according to the exact instructions for use. For this reason, real-world evidence from registries is increasingly sought by device manufacturers and regulators to evaluate devices.

As an example, the European Union Medical Device Regulation (EU MDR) now requires total life-cycle reporting for CE marked medical devices. The Society for Vascular Surgery Vascular Quality Initiative (SVS VQI) recognizes the importance of supporting manufacturers and regulators, both domestic and international, to evaluate vascular devices currently being used in daily practice. SVS VQI collects much relevant data to provide the real-world evidence needed, including blinded comparison with similar device types.

SVS VQI and Fivos have successfully worked together on a variety of projects to provide registry data to device manufacturers to help meet regulatory requirements, including:

- Embedding post-approval device trials in the registry to allow more rapid recruitment of optimally selected centers with overall lower cost
- Expanding indications for use of current devices using RWD about off-label use in VQI
- Providing propensity-score matched control groups as an accurate comparator for new devices that may be disadvantaged by historical control studies treating less severe disease
- Providing data to meet EU MDR requirements for devices used in Europe
- Providing general data for new device development

One of the challenges of device evaluation is long-term follow-up. SVS VQI has been uniquely successful in recording one-year follow-up, but more extended follow-up is needed. To meet this challenge, the SVS VQI has developed the Vascular Implant Surveillance and Interventional Outcomes Network (VISION). VISION matches Medicare claims data with VQI registry data to allow capture of outcome events that are reported in Medicare patients for 5, 10, or more years after initial treatment. This methodology provides an efficient mechanism to capture key long-term outcomes and is now being used by several device manufacturers to evaluate device performance.



## 20. TECHNOLOGY & REGISTRY DEVELOPMENTS

### Upcoming Registry Highlights:

- Supra-inguinal Bypass Follow-up Outcomes Report
- VQI Interactive Dashboard for Carotid Endarterectomy
- Open AAA Major Revision
- PVI minor revision (bailout stent/stent graft)
- CEA Revision (shared decision making)
- Cross Registry Revision (height, race, ethnicity)

### PATHWAYS Technology Highlights:

- Collection of delete reason for previously submitted records
- Center Characteristics - added Contract Entity Name
- PATHWAYS Messages
- Resources moved to Support with additional attributes for searching

### Registry Highlights:

#### New Reporting

- Physician Snapshot Reports - Carotid Artery Stent
- Infra-inguinal Bypass Follow-up Outcomes Report
- Missing Aortic Diameter Report (EVAR & TEVAR)
- VQI Interactive Dashboard - Carotid Artery Stent

#### Across-Registry Revisions

- Smoking Cessation
- Retired COVID & Opioid fields
- CAD Harmonization
- Exercise Program Variables (Infra & Supra-inguinal Bypass, PVI, VMC)
- Anticoagulant Harmonization

#### CAS Registry

- Shared Decision Making

#### Open AAA Repair

ERAS (Enhance Recovery After Surgery)

#### Minor Revisions

- Infra/Supra-inguinal Bypass - minor revision to update dependencies
- PVI - redesigned collection of Mechanical thrombolysis/thrombectomy data, capture reused balloons
- TEVAR - Aberrant Anatomy revision

## 21. FUTURE DEVELOPMENTS

In 2024-2025, the SVS VQI plans to support improved care and promote patient safety in the following areas:

- Interactive Dashboards for all VQI Registries
- Release of Hospital System Reporting
- Enhanced Physician Reporting
- Revisions to Lower Extremity Amputation Registry
- Addition of New Outcome Reporting Measures to all Registries
- Data Automation Integration



**SVS** | **VQI**

*In collaboration with NCDR®*

# **APPENDIX**

# APPENDIX A— VQI SITES LISTED IN ALPHABETICAL ORDER (AS OF 5/1/2024)

Abbott Northwestern Hospital (Allina) MN  
 Abington Memorial Hospital PA  
 Abrazo Arrowhead Campus AZ  
 AdventHealth Celebration FL  
 AdventHealth Daytona Beach FL  
 AdventHealth Ocala FL  
 AdventHealth Orlando FL  
 AdventHealth Redmond GA  
 AdventHealth Tampa FL  
 AdventHealth Waterman FL  
 AdventHealth Zephyrhills FL  
 Adventist Health St. Helena CA  
 Adventist Healthcare Shady Grove Medical Center MD  
 Adventist Healthcare White Oak Medical Center MD  
 Adventist Medical Center La Grange IL  
 Advocate Christ Medical Center IL  
 Advocate Condell Medical Center IL  
 Advocate Good Samaritan Hospital IL  
 Advocate Good Shepherd Hospital IL  
 Advocate Illinois Masonic Medical Center IL  
 Advocate Lutheran General Hospital IL  
 Advocate Sherman Hospital IL  
 Advocate South Suburban Hospital IL  
 Advocate Trinity Hospital IL  
 Aiken Regional Medical Center SC  
 Alamance Regional Medical Center NC  
 Alaska Regional Hospital AK  
 Albany Medical Center NY  
 Albany Vascular Specialist Center GA  
 Allegheny Health Network PA  
 Alta Bates Summit Medical Center CA  
 Altru Hospital ND  
 Alyeska Vascular Surgery AK  
 Anmed Health SC  
 Arizona Endovascular Center AZ  
 Arizona Vascular Specialists, LLC AZ  
 Arkansas Heart Hospital AR  
 Arkansas Heart Hospital Encore AR  
 Arot Health NY  
 Artery and Vein Institute PA  
 Asante Rogue Regional Medical Center OR  
 Ascension Alexian Brothers Medical Center IL  
 Ascension All Saints WI  
 Ascension Borgess Hospital MI  
 Ascension Columbia St. Mary's Hospital Milwaukee, Inc. WI  
 Ascension Columbia St. Mary's Hospital Ozaukee, Inc. WI  
 Ascension Dell Seton Medical Center at the University of Texas TX  
 Ascension Elmbrook WI  
 Ascension Franklin Hospital WI  
 Ascension Genesys Hospital MI  
 Ascension Jane Phillips Medical Center OK  
 Ascension Mercy Hospital - Aurora IL  
 Ascension Our Lady of Lourdes Memorial NY  
 Ascension Providence Hospital - Rochester MI  
 Ascension Providence Hospital (TX) TX  
 Ascension Providence Hospital, Novi Campus MI  
 Ascension Providence Hospital, Southfield Campus MI  
 Ascension Resurrection Medical Center IL  
 Ascension Sacred Heart Emerald Coast FL  
 Ascension Sacred Heart Hospital Bay FL  
 Ascension Sacred Heart Pensacola FL  
 Ascension Saint Alexius Medical Center IL  
 Ascension Saint Francis IL  
 Ascension Saint Joseph - Elgin IL  
 Ascension Saint Joseph Hospital - Chicago IL  
 Ascension Saint Joseph Hospital - Joliet IL  
 Ascension Saint Mary - Chicago IL  
 Ascension Saint Mary - Kankakee IL  
 Ascension Saint Thomas Midtown Hospital TN  
 Ascension Saint Thomas Rutherford Hospital TN  
 Ascension Saint Thomas West Hospital TN  
 Ascension Seton Hays TX  
 Ascension Seton Medical Center Austin TX  
 Ascension Seton Williamson TX  
 Ascension St. Agnes Hospital MD  
 Ascension St. Elizabeth's Medical Center WI  
 Ascension St. Francis Hospital - Milwaukee WI  
 Ascension St. John Hospital MI  
 Ascension St. John Macomb Oakland MI  
 Ascension St. John OK  
 Ascension St. Mary's Hospital MI  
 Ascension St. Vincent Anderson IN  
 Ascension St. Vincent Evansville IN  
 Ascension St. Vincent Heart Center of Indiana, LLC IN  
 Ascension St. Vincent Hospital and Health Center, Inc. IN  
 Ascension St. Vincent's Birmingham AL  
 Ascension St. Vincent's Medical Center - Clay County FL  
 Ascension St. Vincent's Medical Center- Riverside FL  
 Ascension St. Vincent's Medical Center- Southside FL  
 Ascension Via Christi Hospital Pittsburg KS  
 Ascension Via Christi Hospitals Wichita KS  
 Ashland Hospital Corporation d/b/a UK King's Daughters Medical Center KY  
 Aspirus Wausau Hospital, Inc. WI  
 AtlantiCare Regional Medical Center NJ  
 Atrium Health Cabarrus NC  
 Atrium Health Pineville NC  
 Atrium Health Union NC  
 Augusta University Medical Center, Inc. GA  
 Aultman Hospital OH  
 Aurora BayCare Medical Center WI  
 Aurora Medical Center Grafton WI  
 Aurora Medical Center Kenosha WI  
 Aurora Medical Center Manitowoc County WI  
 Aurora Medical Center Oshkosh WI  
 Aurora Medical Center Summit WI  
 Aurora Medical Center Washington County WI  
 Aurora Memorial Hospital Burlington WI  
 Aurora Sheboygan Memorial Medical Center WI  
 Aurora Sinai Medical Center WI  
 Aurora St. Luke's Medical Center WI  
 Aurora St. Luke's South Shore WI  
 Aurora West Allis WI  
 Avera Heart Hospital of South Dakota SD  
 Avera McKennan Hospital SD  
 Backus Hospital CT  
 Bakersfield - Bakersfield Memorial Hospital CA  
 Baltimore Washington Medical Center MD  
 Banner Del E. Web Medical Center AZ  
 Banner Desert Medical Center AZ  
 Banner Heart Hospital AZ  
 Banner North Colorado Medical Center CO  
 Banner-University Medical Center Phoenix AZ  
 Banner-University Medical Center Tucson AZ  
 Baptist Health Deaconess Madisonville, Inc. KY  
 Baptist Health Lexington KY  
 Baptist Health Louisville KY  
 Baptist Health Medical Center - Little Rock AR  
 Baptist Health Medical Center - North Little Rock AR  
 Baptist Health Paducah KY  
 Baptist Hospital of Miami FL  
 Baptist Memorial Hospital TN  
 Barnes Jewish Hospital MO  
 Bartow Regional Medical Center FL  
 Bassett Medical Center NY  
 Baton Rouge General LA  
 Baxter Regional Medical Center AR  
 Bayfront Health Seven Rivers FL  
 Bayhealth Medical Center DE  
 Baylor All Saints Medical Center TX  
 Baylor Jack and Jane Hamilton Heart and Vascular Hospital TX  
 Baylor Scott & White Medical Center - Irving TX  
 Baylor Scott & White Medical Center - McKinney TX  
 Baylor Scott & White Medical Center - Round Rock TX  
 Baylor Scott & White Medical Center Centennial TX  
 Bayshore Medical Center NJ  
 Baystate Medical Center MA  
 Beaufort Memorial Hospital SC  
 Beebe Medical Center DE  
 Bellin Memorial Hospital, Inc. WI  
 Berkeley Medical Center WV  
 Berkshire Medical Center MA  
 Beth Israel Deaconess Medical Center MA  
 Bethesda Hospital East FL  
 Bethesda Hospital West FL  
 Bethesda North Hospital OH  
 Billings Clinic MT  
 Birmingham St. Vincent's East Hospital AL  
 Bismarck - CHI St. Alexius Health ND  
 Blake Medical Center FL  
 Boca Raton Regional Hospital FL  
 Bon Secours Maryview Medical Center VA  
 Bon Secours Memorial Regional Medical Center VA  
 Bon Secours St. Francis Medical Center VA  
 Bon Secours St. Mary's Hospital VA  
 Boston Medical Center MA  
 Bridgeport Hospital CT  
 Brigham and Women's Hospital MA  
 Brockton Hospital MA  
 Bronson Battlecreek Hospital MI  
 Bronson Methodist Hospital MI  
 Brookwood Baptist Medical Center AL  
 Bryan - St. Joseph Health Regional Hospital TX  
 Bryan Medical Center NE  
 BSA Hospital, LLC TX  
 Buffalo General Medical Center NY  
 Butler Memorial Hospital PA  
 California Pacific Medical Center CA  
 Camden Clark Medical Center WV  
 Cape Cod Hospital MA  
 Cape Coral Hospital FL  
 Cape Fear Valley Health NC  
 Capital Health Medical Center-Hopewell NJ  
 Capital Health Regional Medical Center NJ  
 Capital Region Medical Center MO  
 Capital Regional Medical Center FL  
 Cardiothoracic and Vascular Surgical Associates FL  
 Carilion New River Valley Medical Center VA  
 Carilion Roanoke Memorial Hospital VA  
 Carle BroMenn Medical Center IL  
 Carle Foundation Hospital IL  
 Carle Health Methodist Hospital IL  
 CarolinaEast Medical Center NC  
 CaroMont Regional Medical Center NC  
 Catawba Valley Medical Center NC  
 Catholic Health Mercy Hospital of Buffalo NY  
 Catholic Health Sister of Charity Hospital NY  
 Catholic Medical Center, CTSA NH NH  
 Cedars-Sinai Medical Center CA  
 Centennial Hills Hospital Medical Center NV  
 Centropoint Medical Center MO  
 CentraCare Health MN  
 Central Maine Medical Center ME  
 Central Washington Health Services Association WA  
 CentraState Medical Center NJ  
 CGH Medical Center IL  
 Chandler - Chandler Regional Medical Center AZ  
 Charleston Area Medical Center WV  
 Charlton Memorial Hospital MA  
 Chattanooga - CHI Memorial Hospital TN  
 Chesapeake Regional Medical Center VA  
 Chester County Hospital PA  
 Chippenham Hospital VA  
 Christiana Care DE  
 Christus Highland Medical Center LA  
 CHRISTUS Ochsner St. Patrick Hospital LA  
 Christus St. Michael Hospital TX  
 Christus Trinity Mother Frances Hospital TX  
 CHUM QC  
 CISSO Outaouais QC  
 Cleveland Clinic Akron General OH  
 Cleveland Clinic Florida - Weston Hospital FL  
 Cleveland Clinic Martin North Hospital FL  
 Cleveland Clinic OH  
 Cleveland Clinic Tradition Hospital FL  
 Clinton Memorial Hospital OH  
 Coastal Vascular & Interventional, PLLC FL  
 Coastal Vein and Vascular Specialists FL  
 Cobb Hospital GA  
 Coffee Regional Medical Center GA  
 College Station- St. Joseph Health College Station Hospital TX  
 Colorado Springs- Penrose Hospital CO  
 Columbia Surgical Services, Inc. MO  
 Columbus Regional Hospital IN  
 Community Heart and Vascular Hospital IN  
 Community Hospital Anderson IN  
 Community Hospital East IN  
 Community Hospital North IN  
 Community Hospital South IN  
 Community Howard Regional Hospital IN  
 Community Regional Medical Center CA  
 Concord Hospital NH  
 Cone Health NC  
 Cookeville Regional Medical Center TN  
 Cooper University Hospital NJ  
 Coral Gables Hospital FL  
 Corewell Health Dearborn Hospital MI  
 Corewell Health Farmington Hills Hospital MI  
 Corewell Health Grand Rapids Hospitals - Butterworth MI  
 Corewell Health William Beaumont University Hospital MI  
 Corporación Centro Cardiovascular de Puerto Rico y del Caribe PR  
 Corpus Christi Medical Center TX  
 Covenant Healthcare MI  
 Covenant Health-Grey Nuns Hospital AB  
 Covenant Medical Center TX  
 Cox Medical Center South MO  
 Crouse Hospital NY  
 Danbury Hospital CT  
 Dartmouth Hitchcock Medical Center NH  
 DCH Regional Medical Center AL  
 Deaconess Midtown Hospital IN  
 Deborah Heart and Lung Center NJ  
 Decatur Memorial Hospital IL  
 Decatur Morgan Hospital AL  
 Delray Medical Center FL  
 Desert Regional Medical Center CA  
 DLP Conemaugh Memorial Medical Center, LLC PA  
 Doctors Hospital at Renaissance TX  
 Doctors Hospital of Augusta GA  
 Doctors Hospital of Sarasota FL  
 Doctors Hospital OH  
 Doylestown Hospital PA  
 Dr. Ricardo Vasquez, MD IN  
 Duke University Medical Center NC  
 East Alabama Medical Center AL  
 East Jefferson General Hospital LA  
 East Tremont Vascular Health Care, PLLC NY  
 Eden Medical Center CA  
 Edward Hospital IL  
 Einstein Medical Center Montgomery PA  
 Eisenhower Medical Center CA  
 El Camino Health CA  
 Elkhart General Hospital IN  
 Elliot Health System NH  
 Ellis Hospital NY  
 Elmhurst Memorial Hospital IL  
 Emanate Health Inter-Community Hospital CA  
 Emanate Health Queen of the Valley Hospital CA  
 Emory St. Joseph's Hospital GA  
 Emory University Hospital GA  
 Englewood Hospital and Medical Center NJ  
 Essentia Health - Fargo ND  
 Essentia Health - St. Mary's Medical Center MN  
 Evangelical Community Hospital PA  
 Evansville Surgical Associates IN  
 Exeter Hospital NH  
 Fairfield Medical Center OH  
 Fairview Southdale Hospital MN  
 Fairview St. John's Hospital MN  
 Faith Regional Health Services NE  
 Fawcett Memorial Hospital FL  
 Federal Way - St. Francis Hospital WA  
 Firelands Regional Medical Center OH  
 Flagler Hospital FL  
 Flagstaff Medical Center AZ  
 Floyd Medical Center GA  
 Forrest General Hospital Vascular Services MS  
 Fort Sanders Regional Medical Center TN  
 Fox Valley Surgical Associates Ltd. WI  
 Franciscan Health Indianapolis IN  
 Franciscan Health Lafayette East IN  
 Fresno Heart & Surgical Hospital CA  
 Froedtert Health WI  
 Gadsden Regional Medical Center AL  
 Galion Hospital OH  
 Geisinger Community Medical Center PA  
 Geisinger Medical Center PA  
 Geisinger Wyoming Valley Medical Center PA  
 Genesis Hospital OH  
 Genesis Medical Center, Davenport IA  
 Glens Falls Hospital NY  
 Global Neuroscience Institute at Crozer PA  
 Good Samaritan Hospital - San Jose CA  
 Good Samaritan Hospital Medical Center NY  
 Good Samaritan Hospital of Suffern, N.Y. NY  
 Good Samaritan Hospital OH  
 Goshen Hospital IN  
 Gottlieb Memorial Hospital IL  
 Grady Memorial Hospital (GA) GA  
 Grady Memorial Hospital OH  
 Grant Medical Center OH  
 Great River Medical Center IA  
 Griffin Hospital CT  
 Gulf Coast Medical Center FL  
 Gulf Coast Regional Medical Center FL  
 Guthrie Clinic PA  
 Hackensack University Medical Center NJ  
 Halifax Hospital Medical Center FL  
 Harborview Medical Center WA  
 Harlingen Medical Center TX  
 Hartford Hospital CT  
 HCA Florida Aventura Hospital FL  
 HCA Florida Brandon Hospital FL  
 HCA Florida Englewood Hospital FL  
 HCA Florida Fort Walton-Destin Hospital FL  
 HCA Florida Lawnwood Hospital FL  
 HCA Florida Northside Hospital FL

# APPENDIX A— VQI SITES LISTED IN ALPHABETICAL ORDER (AS OF 5/1/2024)

HCA Florida South Tampa Hospital FL	Manatee Memorial Hospital FL	Morristown-Hamblen Healthcare System TN
HCA Houston Healthcare Clear Lake TX	Mansfield Hospital OH	Morton Plant Hospital FL
HCA Houston Healthcare Conroe TX	Margaret R. Pardee Memorial Hospital NC	Morton Plant North Bay Hospital FL
HCA Houston Healthcare Kingwood TX	Marietta Memorial Hospital OH	Mosaic Life Care MO
HCA Houston Healthcare Medical Center TX	Marin Health Medical Center CA	Mount Auburn Hospital MA
HCA Houston Healthcare North Cypress TX	Marion General Hospital OH	Mount Carmel East Hospital OH
HCA Houston Healthcare Northwest TX	Marshall Medical North AL	Mount Carmel Grove City Hospital OH
HCA Houston Healthcare Southeast TX	Marshall Medical South AL	Mount Carmel St. Ann's Hospital OH
HCA Houston Healthcare West TX	Marshfield Clinic Health System, Inc. WI	Mount Nitanny Medical Center PA
Health Park Medical Center FL	Mary Washington Hospital VA	Mount Sinai Hospital NY
HealthPartners, Inc. MN	Massachusetts General Hospital MA	Mount Sinai Medical Center FL
Heart Care Consultants, LLC PA	Maury Regional Medical Center TN	Mount Sinai South Nassau Hospital NY
Heart Hospital of Austin TX	Mayo Clinic Arizona AZ	MultiCare Deaconess Hospital WA
Henrico Doctors' Hospital VA	Mayo Clinic Florida FL	MultiCare Good Samaritan Hospital WA
Henry Ford Allegiance Health MI	Mayo Clinic Health System - Franciscan Healthcare, Inc. (in La Crosse) WI	MultiCare Tacoma General Hospital WA
Henry Ford Hospital, Detroit MI MI	Mayo Clinic Health System - Mankato MN	Munson Medical Center MI
Henry Ford Hospital, West Bloomfield MI MI	Mayo Clinic Hospital - Rochester MN	Murray Calloway County Hospital KY
Henry Ford Macomb Hospital MI	Mayo Clinic Northwest Wisconsin WI	MUSC Health Columbia Medical Center SC
Henry Ford Wyandotte Hospital MI	McKay-Dee Hospital UT	MUSC Health Florence Medical Center SC
Heritage Valley Beaver PA	McKenzie-Willamette Medical Center OR	MyMichigan Health - Midland MI
Hill Country Memorial Hospital TX	McLaren Bay Region MI	Naples Community Hospital FL
Hillcrest Hospital South OK	McLaren Flint MI	Nazareth Hospital PA
Hilo Medical Center HI	McLaren Greater Lansing MI	NEA Baptist Memorial Hospital AK
Hoag Memorial Hospital Presbyterian CA	McLaren Macomb MI	Nebraska Medicine NE
Holmes Regional Medical Center FL	McLaren Northern Michigan MI	Nebraska Methodist Hospital NE
Holston Valley Medical Center TN	McLaren Port Huron MI	New Hanover Regional Medical Center NC
Holy Cross Hospital FL	McLeod Health SC	Newark Beth Israel Medical Center NJ
Holy Name Medical Center NJ	Mease Countryside Hospital FL	Newton-Wellesley Hospital MA
HonorHealth Deer Valley Medical Center AZ	Medical Center Hospital TX	NewYork-Presbyterian Brooklyn Methodist Hospital NY
HonorHealth Scottsdale Osborn Medical Center AZ	Medical Center Navicent Healthcare GA	NewYork-Presbyterian Queens NY
HonorHealth Scottsdale Thompson Peak Medical Center AZ	Medical Center of Trinity FL	NewYork-Presbyterian/Columbia University Irving Medical Center NY
Hospital of the University of Pennsylvania PA	Medical City Dallas TX	NewYork-Presbyterian/Weill Cornell Medical Center NY
Houston - Baylor St. Luke's Medical Center TX	Medical City Denton TX	North Alabama Medical AL
Houston Methodist Baytown Hospital TX	Medical City Fort Worth TX	North Florida Regional Medical Center FL
Houston Methodist Clear Lake Hospital TX	Medical City Plano TX	North Fulton Hospital, Inc. GA
Houston Methodist Hospital TX	Medical Faculty Associates, Inc DC	North Memorial Health Hospital MN
Houston Methodist Sugar Land Hospital TX	Medical University Hospital Authority SC	North Mississippi Medical Center MS
Houston Methodist The Woodlands Hospital TX	Medstar Cardiology Associates DC	North Okaloosa Medical Center FL
Houston Methodist West Hospital TX	Medstar Franklin Square Medical Center MD	North Shore University Hospital NY
Houston Methodist Willowbrook Hospital TX	Medstar Georgetown University Hospital DC	North Shore University Hospital CA
Huntington Hospital CA	Medstar Good Samaritan Hospital MD	NorthBay Medical Center CA
Idaho Falls Community Hospital ID	Medstar Harbor Hospital MD	NorthEast Georgia Medical Center Gainesville GA
Indiana Regional Medical Center PA	Medstar Montgomery Medical Center MD	NorthEast Methodist Hospital TX
Inova Alexandria Hospital VA	Medstar Southern Maryland Hospital Center MD	NorthShore Hospital IL
Inova Fair Oaks Hospital VA	Medstar Union Memorial Hospital MD	Northside Hospital Atlanta GA
Inova Fairfax Hospital VA	Medstar Washington Hospital Center DC	Northside Hospital Cherokee GA
Inova Loudoun Hospital VA	Memorial Health University Medical Center GA	Northside Hospital Forsyth GA
Inova Mount Vernon Hospital VA	Memorial Hermann Cypress Hospital TX	Northside Hospital Gwinnett GA
INTEGRIS Baptist Medical Center, Inc. OK	Memorial Hermann Greater Heights Hospital TX	Northwest Community Hospital IL
Intermountain Medical Center UT	Memorial Hermann Katy Hospital TX	Northwestern Medicine Central DuPage Hospital IL
IU Health - Arnett Hospital IN	Memorial Hermann Memorial City Medical Center TX	Northwestern Medicine Lake Forest Hospital IL
IU Health - Ball Memorial Hospital IN	Memorial Hermann Northeast Hospital TX	Northwestern Memorial Hospital IL
IU Health - Bloomington Hospital IN	Memorial Hermann Southeast Hospital TX	Norton-Audubon KY
IU Health - Methodist IN	Memorial Hermann Southwest Hospital TX	Norton-Brownsboro Hospital KY
IU Health - Saxony Hospital IN	Memorial Hermann Sugar Land TX	Norton-Downtown KY
IU Health - West Hospital IN	Memorial Hermann Texas Medical Center TX	Norwalk Hospital CT
Jackson Madison County General Hospital TN	Memorial Hermann The Woodlands TX	Nova Scotia Health NS
Jackson Memorial Hospital FL	Memorial Hospital at Gulfport MS	Novant Health Forsyth Medical Center NC
Javon Bea Hospital - Riverside Campus IL	Memorial Hospital Belleville IL	Novant Health Matthews Medical Center NC
Jersey Shore University Medical Center NJ	Memorial Hospital Central CO	Novant Health Presbyterian Medical Center NC
JFK Medical Center NJ	Memorial Hospital Jacksonville FL	NYU Langone Hospital - Brooklyn NY
Jobst Vascular Institute OH	Memorial Hospital of Larame County d/b/a Cheyenne Regional Medical Center WY	NYU Langone Hospital - Long Island NY
John Sealy Hospital, UTMB TX	Memorial Hospital of South Bend IN	NYU Langone Medical Center NY
Johnson City Medical Center TN	Memorial Hospital Pembroke FL	Oaklawn Hospital MI
Johnston-Willis Hospital VA	Memorial Hospital West FL	Ocala Regional Medical Center FL
Kadlec Regional Medical Center WA	Memorial Regional Hospital FL	Ocean Medical Center NJ
Kansas Heart Hospital KS	Memorialcare Long Beach Medical Center CA	Ochsner Lafayette General Medical Center LA
Kaweah Delta Medical Center CA	Memorialcare Orange Coast Medical Center CA	Ochsner Medical Center LA
Keck Hospital of USC CA	Memorialcare Saddleback Medical Center CA	Ogden Regional Medical Center UT
Kennedy University Hospital NJ	Menorah Medical Center KS	OhioHealth Pickerington Medical Campus OH
Kennestone Hospital GA	Mercy Fitzgerald PA	Oklahoma Heart Hospital South, LLC OK
Kent Hospital RI	Mercy Health - Anderson Hospital OH	Oklahoma Heart Hospital, LLC OK
Kettering Health Dayton OH	Mercy Health - Fairfield Hospital OH	Oklahoma Heart Institute at Hillcrest Medical Center OK
Kettering Health Hamilton OH	Mercy Health - Lourdes Hospital KY	Omaha - CHI Health Creighton University Medical Center - Bergan Mercy NE
Kettering Health Main Campus OH	Mercy Health - St. Elizabeth Youngstown Hospital OH	Omaha - CHI Health Immanuel NE
Kettering SoIn Medical Center OH	Mercy Health - The Jewish Hospital OH	Orange Regional Medical Center NY
Kootenai Health ID	Mercy Health - West Hospital OH	Oregon Health & Science University OR
Lake Cumberland Regional Hospital KY	Mercy Health Lorian OH	Oregon Heart Center OR
Lakeland Regional Medical Center FL	Mercy Health Muskegon Hospital MI	Oregon Vascular Specialists, LLC OR
Lakeview Regional Medical Center LA	Mercy Health Saint Mary's MI	Orlando Health, Inc. Dr. P. Phillips Hospital FL
Lakewood Ranch Medical Center FL	Mercy Health St. Rita's Medical Center OH	Orlando Health, Inc. Health Central Hospital FL
Lakewood - St. Anthony Hospital CO	Mercy Hospital (Allina) MN	Orlando Health, Inc. Orlando Regional Medical Center FL
Lancaster General Hospital PA	Mercy Hospital Joplin MO	Orlando Health, Inc. South Lake Hospital FL
Largo Medical Center FL	Mercy Hospital Northwest Arkansas (FKA Mercy Medical Center) AR	Orlando Health, Inc. South Seminole Hospital FL
Lawrence + Memorial Hospital CT	Mercy Hospital South MO	OSF Heart of Mary Medical Center IL
Legacy Health OR	Mercy Hospital Springfield MO	OSF Saint Anthony Medical Center IL
Lehigh Valley Hospital - Cedar Crest PA	Mercy Hospital St. Louis MO	OSF Saint Francis Medical Center IL
Lehigh Valley Hospital - Muhlenberg PA	Mercy Medical Center MD	OSF St. Joseph Medical Center IL
Lehigh Valley Hospital - Pocono PA	Mercy Medical Center, Cedar Rapids, Iowa IA	OU Medical Center OK
Lenox Hill Hospital NY	MercyOne Des Moines Medical Center IA	Our Lady of Lourdes Heart Hospital LA
LewisGale Medical Center VA	MercyOne Siouxland Medical Center IA	Our Lady of Lourdes Regional Medical Center LA
Lexington - Saint Joseph Hospital KY	Meritus Medical Center MD	Our Lady of the Lake Hospital, Inc. LA
Lexington Medical Center SC	Methodist Dallas Medical Center TX	Overland Park Regional Medical Center KS
Licking Memorial Hospital OH	Methodist Germantown Hospital TN	Overlook Hospital NJ
Lincoln - CHI Health Nebraska Heart NE	Methodist Hospital TX	Owensboro Health Regional Hospital KY
Little Rock - CHI St. Vincent's Infirmary AR	Methodist Richardson Medical Center TX	Oxnard - St. John's Regional Medical Center CA
Loma Linda University Medical Center CA	Methodist University Hospital TN	Palm Beach Gardens Medical Center FL
Long Island Jewish Medical Center NY	MetroHealth Medical Center OH	Palo Alto Medical Foundation CA
Los Alamitos Medical Center CA	Michigan Vascular Center MI	Parkview Medical Center CO
Los Robles Medical Center CA	Middlesex Hospital CT	Parkview Regional Medical Center IN
Lovelace Medical Center NM	MidHudson Regional Hospital NY	Parkwest Medical Center TN
Loyola University Medical Center IL	Midland Memorial Hospital TX	PeaceHealth Riverbend Medical Center OR
Lutheran Medical Center CO	MidState Medical Center CT	PeaceHealth Southwest Medical Center WA
Lyerly Baptist Neurosurgery FL	Midwest Aortic & Vascular Institute, P.C. MO	PeaceHealth St. Joseph Medical Center WA
Lynchburg General Hospital VA	Midwest Institute Minimally Invasive Therapies IL	Penn Medicine Princeton Health NJ
M Health Fairview Clinic - Woodwinds MN	Mission Hospital NC	Penn Presbyterian Medical Center PA
MacNeal Hospital IL	Mission Hospital-Mission Viejo CA	Penn State Health Holy Spirit Medical Center PA
Maimonides Medical Center NY	Mobile Infirmary AL	Penn State Health Milton S. Hershey Medical Center PA
Main Line Health's subsidiary - Riddle Hospital PA	Monmouth Medical Center NJ	Penn State Health St. Joseph's Medical Center PA
Main Line Health's subsidiary, Main Line Hospitals, Inc. - Bryn Mawr Hospital PA	Monongalia County General Hospital Company d/b/a Mon Health Medical Center WV	Penn State Health, Lancaster PA
Main Line Health's subsidiary, Main Line Hospitals, Inc. - Paoli Hospital PA	Montefiore Medical Center NY	Pennsylvania Hospital PA
Maine Medical Center ME	Monument Health Rapid City Hospital, Inc. SD	Peripheral Vascular Associates TX
MaineGeneral Medical Center ME	Morristown Medical Center NJ	Peter Lougheed Centre AB

# APPENDIX A— VQI SITES LISTED IN ALPHABETICAL ORDER (AS OF 5/1/2024)

Piedmont Augusta Hospital GA  
 Piedmont Hospital GA  
 Pikeville Medical Center KY  
 Pima Vascular AZ  
 PineHurst Surgical NC  
 Placentia-Linda Hospital CA  
 Portneuf Medical Center ID  
 Portsmouth Regional Hospital NH  
 Pottstown Hospital PA  
 Premier Vascular, LLC IL  
 Presbyterian Hospital NM  
 Presbyterian/St. Luke's Medical Center CO  
 Prescott - Yavapai Regional Medical Center AZ  
 Princeton Baptist Medical Center AL  
 Prisma Health Richland SC  
 Providence Alaska Medical Center AK  
 Providence Holy Cross Medical Center CA  
 Providence Little Company of Mary-Torrance CA  
 Providence Medford Medical Center OR  
 Providence Portland Medical Center OR  
 Providence Regional Medical Center Everett WA  
 Providence Sacred Heart Medical Center WA  
 Providence St. Joseph Medical Center CA  
 Providence St. Jude Fullerton CA  
 Providence St. Mary Medical Center (WA) WA  
 Providence St. Peter Hospital WA  
 Providence St. Vincent Medical Center OR  
 Radiology Associates-Fox Valley WI  
 Raleigh General Hospital WV  
 Rapides Regional Medical Center LA  
 Redlands Community Hospital CA  
 Redwood City - Sequoia Hospital CA  
 Reid Health IN  
 Reliant Medical Group, Inc. MA  
 Reston Hospital Center VA  
 Rex Hospital, Inc. NC  
 Rhode Island Hospital RI  
 Riverside Community Hospital CA  
 Riverside Medical Center IL  
 Riverside Methodist Hospital OH  
 Riverside Regional Medical Center VA  
 Riverview Medical Center NJ  
 Roper St. Francis SC  
 Roseburg - CHI Mercy Health Medical Center OR  
 Rush University Medical Center IL  
 Rutgers Jersey City Medical Center NJ  
 RWJBarnabas Health Community Medical Center NJ  
 RWJUH Hamilton NJ  
 Saint Alphonsus Regional Medical Center ID  
 Saint Barnabas Medical Center NJ  
 Saint Francis Hospital and Medical Center CT  
 Saint Joseph Hospital CO  
 Saint Joseph Regional Medical Center-South Bend Campus IN  
 Saint Joseph's Hospital GA  
 Saint Luke's Episcopal Presbyterian Hospital MO  
 Saint Luke's Hospital of Kansas City MO  
 Saint Luke's Memorial Hospital PR  
 Saint Mary's Regional Medical Center NV  
 Salem Health OR  
 Salem Hospital MA  
 San Antonio Vascular and Endovascular Clinic TX  
 San Bernardino - St. Bernardine Medical Center CA  
 San Diego Vascular Center CA  
 San Luis Obispo - French Hospital Medical Center CA  
 Sanford Clinic Vascular Associates SD  
 Sanford Medical Center Fargo ND  
 Sanger Heart and Vascular Institute NC  
 Santa Clara Valley Medical Center CA  
 Santa Cruz - Dominican Hospital CA  
 Santa Rosa Memorial CA  
 Sarasota Memorial Hospital - Venice Campus FL  
 Sarasota Memorial Hospital FL  
 Scott & White Memorial Hospital TX  
 Scripps Green Hospital CA  
 Scripps Memorial Hospital Encinitas CA  
 Scripps Memorial Hospital La Jolla CA  
 Seattle - Virginia Mason Medical Center WA  
 Seattle Vascular Surgery WA  
 Self Regional Health SC  
 Sentara Albemarle Medical Center NC  
 Sentara Careplex Hospital VA  
 Sentara Leigh Hospital VA  
 Sentara Martha Jefferson VA  
 Sentara Norfolk General Hospital VA  
 Sentara Northern Virginia Medical Center VA  
 Sentara Obici Hospital VA  
 Sentara Princess Anne Hospital VA  
 Sentara RMH Medical Center VA  
 Sentara Virginia Beach General Hospital VA  
 Sentara Williamsburg Regional Medical Center VA  
 Shannon Medical Center TX  
 Sharp Grossmont Hospital CA  
 Sharp Memorial Hospital CA  
 Shea Medical Center AZ  
 Shelby Baptist Medical Center AL  
 Shore Medical Center NJ  
 ShorePoint Health Port Charlotte FL  
 Sierra Vista Regional Medical Center CA  
 Silverdale - St. Michael Medical Center WA  
 Singapore General Hospital N/A  
 Slidell Memorial Hospital LA  
 South Bay Hospital FL  
 South Florida Baptist FL  
 South Georgia Medical Center GA  
 South Miami Hospital FL  
 Southeast Georgia Health System, Inc. - Brunswick Campus GA  
 Southern Hills Hospital and Medical Center NV  
 Southern Ocean Medical Center NJ  
 Southside Hospital NY  
 Southwest Healthcare System CA  
 Sparrow Hospital MI  
 Spartanburg Regional SC  
 Spotsylvania Regional Medical Center VA  
 Springfield Memorial Hospital IL  
 Springfield Regional Medical Center OH  
 Springhill Medical Center AL  
 SSM Health DePaul Hospital - St. Louis MO  
 SSM Health Good Samaritan - Mount Vernon, IL IL  
 SSM Health Saint Louis University Hospital MO  
 SSM Health St. Agnes Hospital - Fond du Lac, WI WI  
 SSM Health St. Clare Hospital - Fenton MO  
 SSM Health St. Joseph Hospital - St. Charles MO  
 SSM Health St. Mary's Hospital - Madison WI  
 SSM St. Anthony Hospital OK  
 St. Anthony's Hospital-FL FL  
 St. Bernards Medical Center AR  
 St. Charles Health System, Inc. OR  
 St. Charles Hospital NY  
 St. Clair Hospital PA  
 St. David's Medical Center TX  
 St. David's North Austin Medical Center TX  
 St. David's Round Rock Medical Center TX  
 St. David's South Austin Medical Center TX  
 St. Dominic's Memorial Hospital and Medical Associates MS  
 St. Elizabeth Medical Center MA  
 St. Francis Hospital - Wilmington DE  
 St. Francis Hospital Downtown SC  
 St. Francis Hospital NY  
 St. George Regional Hospital UT  
 St. John's Health Center CA  
 St. John's Hospital IL  
 St. Joseph - Orange CA  
 St. Joseph Hospital (Eureka) CA  
 St. Joseph Hospital of NH NH  
 St. Joseph Medical Center MO  
 St. Joseph Mercy Health System MI  
 St. Joseph's Hospital North FL  
 St. Joseph's Hospital South FL  
 St. Joseph's Hospital-FL FL  
 St. Luke's Boise Medical Center ID  
 St. Luke's Hospital - Allentown Campus PA  
 St. Luke's Hospital - Bethlehem Campus PA  
 St. Luke's Hospital - MN MN  
 St. Luke's Hospital - Monroe Campus PA  
 St. Luke's Hospital - Upper Buck Campus PA  
 St. Luke's Hospital - Warren Campus NJ  
 St. Luke's Hospital MA  
 St. Luke's Magic Valley Hospital ID  
 St. Luke's Methodist Hospital IA  
 St. Luke's-Roosevelt Hospital Center NY  
 St. Mary Medical Center (CA) CA  
 St. Mary Medical Center PA  
 St. Mary Medical Center-Hobart IN  
 St. Mary Mercy Livonia MI  
 St. Mary's Health ME  
 St. Mary's Hospital - Waterbury CT  
 St. Mary's Hospital CO  
 St. Mary's Hospital, Decatur, of the Hospital Sisters of the Third Order of St. Francis IL  
 St. Mary's Medical Center (WV) WV  
 St. Patrick Hospital MT  
 St. Peter's Hospital NY  
 St. Vincent Healthcare MT  
 St. Vincent Hospital of the Hospital Sisters of the Third Order of St. Francis WI  
 St. Vincent's Medical Center CT  
 Stafford Hospital VA  
 Stamford Hospital CT  
 Stanford Health Care CA  
 Stanford Health Care-TriValley CA  
 Staten Island University Hospital - North Site NY  
 Stockton - St. Joseph's Medical Center CA  
 Stony Brook University Medical Center NY  
 Straub Medical Center HI  
 Suburban Hospital MD  
 Summa Health System OH  
 Surgical Specialists of Central Florida FL  
 Sutter Medical Center Sacramento CA  
 Sutter Roseville Medical Center CA  
 SW General Health Center OH  
 Swedish Cherry Hill WA  
 Swedish First Hill WA  
 Tacoma - St. Joseph Medical Center WA  
 Tallahassee Memorial HealthCare, Inc FL  
 Tampa General Hospital FL  
 Tenet Florida Physicians Services FL  
 Terrebonne General Medical Center LA  
 Texas Health Harris Methodist Fort Worth TX  
 Texas Health HEB TX  
 Texas Health Presbyterian Hospital Dallas TX  
 Texas Health Presbyterian Hospital Denton TX  
 Texas Health Resources Plano TX  
 Texoma Medical Center TX  
 The Christ Hospital OH  
 The Heart Hospital Baylor Denton TX  
 THE HEART HOSPITAL Baylor Plano TX  
 The Hospital Of Central Connecticut CT  
 The Johns Hopkins Hospital MD  
 The Medical Center at Bowling Green KY  
 The Miriam Hospital RI  
 The Reading Hospital and Medical Center PA  
 The University of California Irvine CA  
 The University of California San Diego Medical Center CA  
 The University of Texas Southwestern Medical Center - Cerebrovascular Group TX  
 The University of Texas Southwestern Medical Center TX  
 The Valley Hospital NJ  
 Thomas Jefferson University Hospital PA  
 Thomas Memorial Hospital WV  
 Three Crosses Regional Hospital NM  
 Thunder Bay Regional Health Science Center ON  
 TidalHealth Guerrieri Heart and Vascular Institute MD  
 Tift Regional Medical Center GA  
 Toronto General Hospital ON  
 Torrance Memorial Medical Center CA  
 Trident Medical Center SC  
 TriStar Centennial Medical Center TN  
 TriStar Summit Medical Center TN  
 Tucson Medical Center AZ  
 Tufts Medical Center MA  
 Turkey Creek Medical Center TN  
 Tyler Regional Hospital TX  
 U of Texas Health Science Center, San Antonio TX  
 UC Davis Health System CA  
 UCLA Ronald Reagan Medical Center CA  
 UCSF Medical Center CA  
 UH Elyria Medical Center OH  
 UH St. John Medical Center OH  
 UK HealthCare KY  
 UMass Memorial Medical Center, Inc. MA  
 UMC El Paso Healthcare, Inc. TX  
 UNC Health Johnston NC  
 United Health Services Hospitals, Inc. NY  
 United Hospital (Allina) MN  
 United Hospital Center WV  
 UnityPoint Health - Meriter Hospital WI  
 UnityPoint Health Des Moines IA  
 University Hospitals Ahuja Medical Center OH  
 University Hospitals Cleveland Medical Center OH  
 University Of Alabama Medical Center AL  
 University of Chicago Medical Center IL  
 University of Cincinnati Medical Center, LLC OH  
 University of Colorado, Denver CO  
 University of Colorado, North Vascular Services CO  
 University of Connecticut Health Center CT  
 University of Florida, Gainesville FL  
 University of Iowa Hospitals and Clinics IA  
 University of Kansas Hospital Authority KS  
 University of Maryland Medical Center MD  
 University of Miami Hospital and Clinics FL  
 University of Michigan MI  
 University of Minnesota Medical Center (UMMC) MN  
 University of Mississippi Medical Center MS  
 University of Missouri Medical Center MO  
 University of North Carolina Hospitals NC  
 University of Oklahoma School of Community Medicine OK  
 University of Rochester Medical Center NY  
 University of Tennessee Medical Center TN  
 University of Utah Hospital and Clinics UT  
 University of Vermont Medical Center VT  
 University of Virginia Health System VA  
 University of Washington Medical Center WA  
 University of Wisconsin Hospitals and Clinics Authority WI  
 University Surgical Associates TN  
 UofL Health - Jewish Hospital KY  
 UofL Health - Mary & Elizabeth Hospital KY  
 UofL Health - Medical Center East KY  
 UofL Health - University of Louisville Hospital KY  
 UPMC Altoona PA  
 UPMC Pinnacle Hanover PA  
 UPMC Pinnacle Harrisburg PA  
 UPMC Pinnacle Memorial PA  
 UPMC Pinnacle West Shore PA  
 UPMC Western Maryland MD  
 UPMC Williamsport PA  
 UPMC/Hamot Hospital PA  
 UPP Vascular Surgery PA  
 Upstate University Medical Center NY  
 USC Arcadia Hospital CA  
 Utah Valley Hospital UT  
 Valley Regional Medical Center TX  
 Valley Vascular Consultants, P.C. AL  
 Vanderbilt University Medical Center TN  
 Vanguard Vascular and Vein PLLC TX  
 Vascular Institute of Chattanooga, PLLC TN  
 Vascular Institute of Michigan MI  
 Vascular Surgery Associates FL  
 Vascular Surgery Associates, LLC MD  
 Vassar Brothers Medical Center NY  
 VCU Health System Authority VA  
 Verde Valley Medical Center AZ  
 VHS of Arrowhead, Inc. d/b/a Abrazo Arizona Heart Hospital AZ  
 Vidant Medical Center NC  
 Virtua Marlton Hospital NJ  
 Virtua Mount Holly Hospital NJ  
 Virtua Our Lady of Lourdes Hospital NJ  
 VVAS - Varicose Vein and Aesthetic Solutions AZ  
 Wake Forest University Baptist Health Medical Center NC  
 WakeMed Health & Hospitals-Cary Campus NC  
 WakeMed Health & Hospitals-Raleigh Campus NC  
 Washington Hospital Health System CA  
 Washington Regional Medical Center AR  
 Waterbury Hospital CT  
 Waukesha Memorial Hospital WI  
 Wayne UNC Healthcare NC  
 Wellington Regional Medical Center FL  
 WellSpan York Hospital PA  
 West Jefferson Medical Center LA  
 West Medical Center OH  
 West Virginia University Hospital WV  
 Westchester Medical Center NY  
 Westmoreland Regional Hospital PA  
 Wexner Medical Center OH  
 Wheeling Hospital WV  
 White Plains Hospital NY  
 Williamson Medical Center TN  
 Willis-Knighton North LA  
 Winchester Hospital MA  
 Winchester Medical Center VA  
 Winter Haven Hospital FL  
 Wooster Community Hospital OH  
 Wynn Hospital NY  
 Yale New Haven Hospital CT  
 Yuma Regional Medical Center AZ



## APPENDIX B— SOCIETY FOR VASCULAR SOCIETY PATIENT SAFETY ORGANIZATION (SVS PSO)

The Patient Safety and Quality Improvement Act of 2005 authorized the creation of Patient Safety Organizations (PSO) to improve the quality and safety of health care by the collection and analysis of patient data. It protects any comparative outcome analyses or other aggregated reports that is generated by a PSO from discovery in state and federal court. These analyses and reports, called Patient Safety Work Products (PSWP) can be used for quality improvement but not for disciplinary action against a provider. It allows patient identifiers to be collected, without specific IRB or patient approval. This permits a PSO to match patients with other data sources, such as the Social Security Death Index or Medicare claims data to evaluate long-term effectiveness of procedures in terms of mortality or complications. The identity of patients, hospitals, providers and other protected health information cannot be disclosed by a PSO, although non-identifiable data can be published for quality improvement research, adhering to both PSO and HIPAA requirements. SVS VQI embraced the use of a PSO to house its activities, because it provides substantially more security and protection than most registries.

### VQI SUPPORTING SOCIETIES

American College of Cardiology\*  
American Venous Forum\*  
Canadian Society for Vascular Surgery  
Eastern Vascular Society  
Florida Vascular Society  
Georgia Vascular Society  
Michigan Vascular Society  
Midwestern Vascular Surgical Society  
New England Society for Vascular Surgery  
New York Society for Vascular Surgery  
Peripheral Vascular Surgery Society  
Rocky Mountain Vascular Society  
Society for Clinical Vascular Surgery  
Society for Vascular Medicine\*  
Society for Vascular Ultrasound\*  
Southern Association for Vascular Surgery  
Southern California Vascular Surgical Society  
The American Heart Association\*  
Vascular Access Society of America\*  
Western Vascular Society

\*Members of SVS PSO Governing Council

## APPENDIX C—PATHWAYS FIVOS CLINICAL PLATFORM

The SVS Vascular Quality Initiative is built on the Fivos PATHWAYS® clinical registry platform. The secure, cloud-based solution allows users—physicians, clinical data managers, researchers, and more—to track, measure, and analyze clinical information, promote collaboration, objectively drive decisions, and optimize performance.

Accessible by any computer with a compatible browser, PATHWAYS is designed to easily integrate into a variety of workflows by allowing multiple users to access and enter data on a single procedure form, and to spread the responsibilities of data entry to more than one individual. Authentication identifies users' roles and permissions to ensure appropriate access to content within PATHWAYS. Real-time data validation through error-trapping and alerts ensures that only high quality data is populated into the system. PATHWAYS has been designed to support large-scale quality improvement and research projects as dynamic content within registries can easily be added and modified.

### About Fivos

Fivos connects healthcare professionals with real world data, providing the insight necessary to elevate patient care, advance innovation, and achieve regulatory goals. Fivos' solutions include registry development and support for medical societies, along with custom data services for device manufacturers.

Combining decades of industry experience, a thorough understanding of data science, and a large dose of curiosity, Fivos is committed to empowering healthcare organizations to leverage data to create efficiencies, manage costs, and improve outcomes. For more information, visit [www.fivoshealth.com](http://www.fivoshealth.com).





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