SVS | VQI

In collaboration with NCDR®

2022 ANNUAL REPORT

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APPENDICES

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

"If you can't measure it, you can't improve it."

This famous business aphorism is attributed to Peter Drucker, management guru, and VQI is all about measuring and improving (vascular care). The mission of VQI is to improve the quality of vascular care by providing clinicians the data and the tools to facilitate quality improvement. In 2019, the Paclitaxel controversy erupted and interrupted our usual clinical algorithms. In 2020, COVID-19 came into our world and didn't go away. VQI data has played a significant role in analyzing, understanding, and treating patients with regards to both the Paclitaxel issue and COVID-19. VQI provided real world evidence that informed clinicians about how their patients could be impacted by Paclitaxel devices[1],[2] and/or COVID-19 illness.[3, 4] In November, 2021, the FDA convened a panel to look at the risk-benefit of Endologix endovascular grafts and the role of real world surveillance[5]. Again, VQI data was highlighted as playing a significant role in device evaluation and providing real world evidence (more details in section Using SVS VQI Data for Collaborative Projects).

Each center receives quarterly dashboards and regular performance reports to allow them to do meaningful quality assurance and focus their quality improvement initiatives. Biannual regional meetings allow physicians, nurses, data managers, quality officers, and others to meet, share information and ideas, and learn from each other in a positive and supportive environment. Members have used SVS VQI data to significantly improve the delivery of vascular care at a local and national level thereby reducing complications and expenses.

The VQI registries continue to have strong growth in participation by new centers and providers. SVS VQI's 14 registries contain demographic, clinical, procedural and outcomes data from more than 900,000 vascular procedures performed nationwide and in Canada, Puerto Rico and Singapore. Each record includes information from the patient's initial treatment and one-year follow-up. Over 10,000 new procedures are added monthly. The wealth of data in the registry allows centers and providers to be aware of their performance and comparison to regional and national benchmarks.

Investigators have used SVS VQI data for risk stratification, outcomes analysis, quality improvement, defining best clinical practices, comparative effectiveness research and reducing resource utilization. This work has resulted in more than 500 scientific publications in peer-reviewed journals since 2011. SVS VQI membership also facilitates participation in clinical trials and other medical device evaluation projects.

The SVS VQI collaborates with multiple other organizations, including the American College of Cardiology (ACC), American Venous Forum (AVF), American Heart Association (AHA), Society for Vascular Medicine (SVM), Vascular Access Society of the Americas (VASA), Society for Vascular Ultrasound (SVU), governmental regulatory agencies, device manufacturers, and payers. The Registry Assessment of Peripheral Interventional Devices (RAPID) is a public/private partnership which uses the strength of different societies (SVS, ACC, and SIR) and their registries to enhance device evaluation and to develop objective performance criteria for the endovascular treatment of lower- extremity arterial occlusive disease. SVS VQI also works with industry to provide clinically detailed data for device performance, post-market surveillance, and label expansion. SVS VQI has partnered with vascular registries from Europe and Asia to form the International Consortium of Vascular Registries (ICVR) to bring a global perspective to improving vascular care and device evaluation.

So in response to Peter Drucker, VQI will continue to measure "it", so we can all continue to improve the quality of vascular care.

1. MORTALITY AFTER PACLITAXEL COATED BALLOON ANGIOPLASTY AND STENTING OF SUPERFICIAL FEMORAL AND POPLITEAL ARTERY IN THE VASCULAR QUALITY INITIATIVE. Bertges DJ, Sedrakyan A, Sun T, Eslami MH, Schermerhorn M, Goodney PP, Beck AW, Cronenwett JL, Eldrup-Jorgensen J. Circ Cardiovasc Interv. 2020 Feb;13(2):e008528. doi: 10.1161/CIRCINTERVENTIONS.119.008528. Epub 2020 Feb 7. PMID: 32069110

2. Vascular Quality Initiative Surveillance of Femoropopliteal Artery Paclitaxel Devices.
Bertges DJ, Eldrup-Jorgensen J, Robbins S, Ssemaganda H, Malone M, Marinac-Dabic D, Smale J, Lottes AE, Majithia A, Resnic FS; Society for Vascular Surgery Vascular Quality Initiative.JACC Cardiovasc Interv. 2021 Dec 13;14(23):2598-2609. doi: 10.1016/j.jcin.2021.08.058

3. The impact of COVID-19 pandemic on vascular registries and clinical trials. Aziz F, Behrendt CA, Sullivan K, Beck AW, Beiles CB, Boyle JR, Mani K, Benson RA, Wohlauer MV, Khashram M, Jorgensen JE, Lemmon GW.Semin Vasc Surg. 2021 Jun;34(2):28-36. doi: 10.1053/j.semvascsurg.2021.04.001. Epub 2021 May 21

4. EFFECTS OF CORONAVIRUS 2019 ON THE SOCIETY FOR VASCULAR SURGERY VASCULAR QUALITY INITIATIVE ARTERIAL PROCEDURE REGISTRY. Natarajan JP, Mahenthiran AK, Bertges DJ, Huffman KM, Eldrup-Jorgensen J, Lemmon GW.J Vasc Surg. 2021 Feb 4:S0741-5214(21)00138-5. doi: 10.1016/j.jvs.2020.12.087

5. https://www.fda.gov/advisory-committees/advisory-committee-calendar/November-2-3-2021-circulatory-system-devices-panel-medical-devices-advisory-committee-meeting

2. INTRODUCTION TO THE SVS VASCULAR QUALITY INITIATIVE

The SVS VQI is a collaboration of the SVS Patient Safety Organization (PSO), 18 regional quality improvement groups, and Fivos (Formerly Medstreaming/M2S), 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 Chicago. 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 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.

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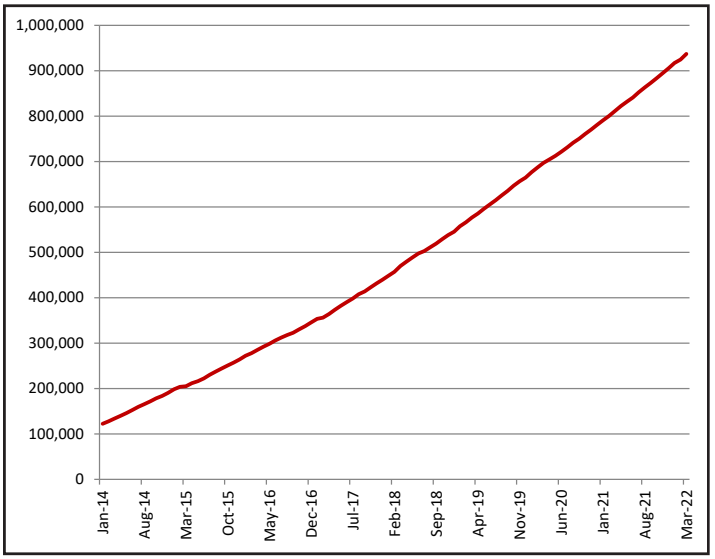
VQI Procedure Volume Growth



THE SVS VQI REGISTRIES

As of April 1, 2022, there are 14 SVS VQI registries that contain 936,887 vascular procedures. From May 1, 2021 through April 1, 2022, there were over 105,000 procedures added to the registries.

Total Procedures Captured as of 4/1/2022	936,887
Peripheral Vascular Intervention	317,955
Carotid Endarterectomy	172,414
Infra-Inguinal Bypass	73,346
Carotid Artery Stent	72,267
Endovascular AAA Repair	71,506
Hemodialysis Access	69,705
Varicose Vein	53,246
Lower Extremity Amputations	24,459
Thoracic & Complex EVAR	24,435
Supra-Inguinal Bypass	23,646
IVC Filter	17,117
Open AAA Repair	16,188
Vascular Medicine Consult	527
Venous Stent	76

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
- 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

3. MYPAD PILOT FOR PATIENT REPORTED OUTCOMES

In April of 2021, the SVS VQI launched My PAD, a pilot program for the collection of patient-reported outcomes (PRO) on patients undergoing endovascular treatment for peripheral arterial disease (PAD) in the Peripheral Vascular Intervention (PVI) Registry.

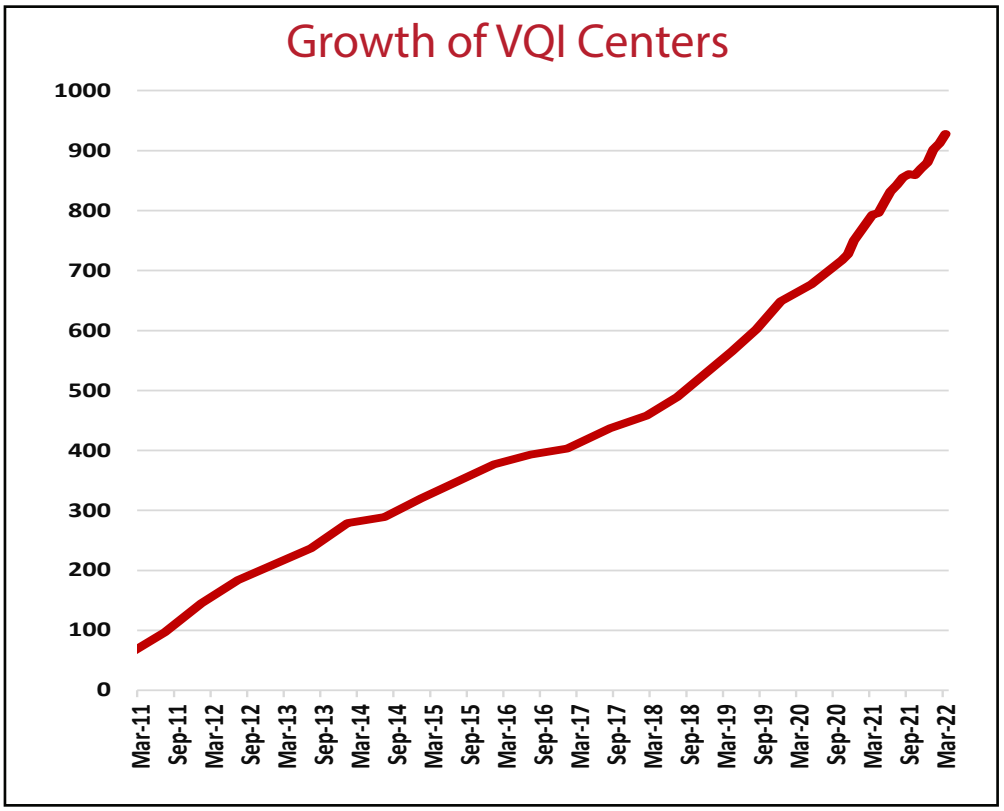
Ten centers that participate in the PVI Registry, volunteered to collect health related quality of life surveys before and after PVI for claudication and chronic limb threatening ischemia (CLTI). Vascu-QoI-6 (VQ-6) and Euro-QoL 5D-5L were collected preoperatively and at 30-days. Multiple workflows for PRO entry including paper forms and web-based entry with email prompts were provided and implemented at the centers' discretion.

Early analysis of preoperative and 30-day PRO demonstrates the feasibility of PRO collection in multiple clinical settings within the VQI PVI registry. Objective assessment of the patient perspective is an important clinical reference. Early postoperative improvement was recorded for patients with claudication and CLTI. Future work will focus on one-year outcomes, improving data capture and expanding PRO collection to additional centers. We are working towards a future in which patient reported outcomes are available at the bedside and become an important part of vascular practice.
The SVS VQI is extending the pilot of the My PAD project to continue to gather information. My PAD will serve as a foundation for future SVS VQI patient-reported outcome programs.

If you are interested in joining our effort please contact PathwaysSupport@fivoshealth.com

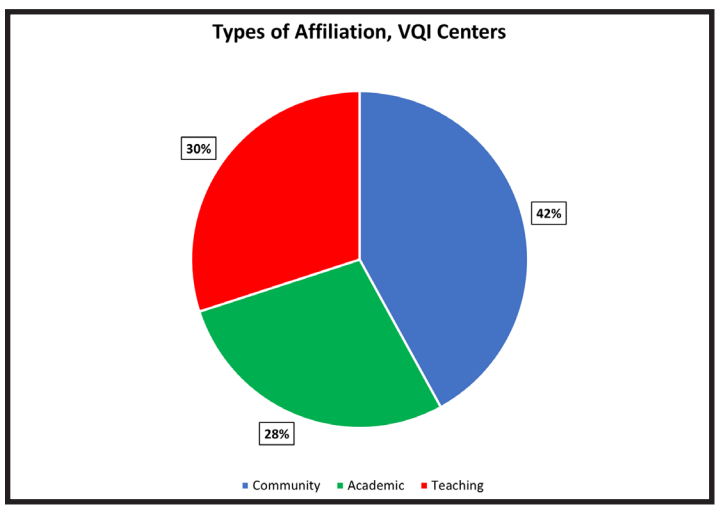
4. SVS VQI MEMBERS PROFILE

Participation in SVS VQI continues with steady growth reaching over 900 centers including office-based laboratories by the end of March 2022 (Figure 5.1). There is a broad distribution of different practice types – 28% academic institutions, 30% teaching hospitals and 42% community hospitals (Figure 5.2). There is also broad distribution of physician specialties – less than half vascular surgeons, 16% interventional cardiology, 14% interventional radiology, 6% general surgery, 5% cardiothoracic surgery, 4% neurosurgery, 3% podiatry, 2% orthopedic surgery and 1% Neurology (Figure 5.3).



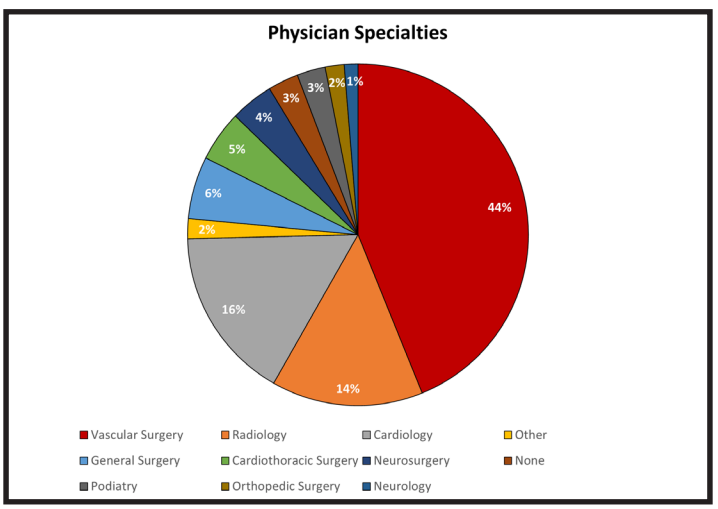
Source: Fivos PATHWAYS Data, April 2022

Figure 4.1: Growth of SVS VQI Centers (as of April 1, 2022)



Source: Fivos PATHWAYS data, Jan 2022

Figure 4.2: SVS VQI Participating Hospital Types



Source: Fivos PATHWAYS Data, Jan 2022

Figure 4.3: Distribution of SVS VQI Physician Specialties

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. The program began in 2022. This program is open to interested residents and fellows in General Surgery, both tracks of Vascular Surgery programs, Interventional Cardiology and Vascular Medicine.

The Fellowship in Training (FIT) program is 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, FIT applicants work closely with their VQI mentor on participation in regional biannual meetings and review of 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 VQI research advisory committee (RAC). Advancement through the 12-18 month program provides the FIT applicant opportunity to present their work during VQI@VAM with potential selection for a highly coveted Jack L Cronenwett Scholarship (five scholarships to be awarded for up to $10,000) to continue research and/or work more closely with VQI/PSO staff and committees.

A rigorous selection process was employed to review the many strong applications we received for the program. 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 outstanding group of young physicians committed to vascular care!

Inaugural FIT Trainees

Aarathi Minisandram
Mentor: Sarah Deery
Maine Medical Center

Ben Li
Mentor: Graham Roche-Nagle
Toronto General Hospital

Blake Murphy
Mentor: Sara Zettervall
University of Washington Medical Center

Brianna Krafcik
Mentor: Phil Goodney
Dartmouth Hitchcock Medical Center

Caronae Howell
Mentor: Benjamin Brooke
The Univ. of Arizona/University of Utah Hospital & Clinics

Channa Blakely
Mentor: Shihuan K Wang
UTMB Health/Memorial
Hermann Texas Medical Center

Christine Kariya
Mentor: Danny Bertges
University of Vermont Medical Center

Claire Motyl
Mentor: Adam Beck
University of Alabama Medical Center

Hanaa Dakour Aridi
Mentor: Michael Murphy
IU Health – Methodist

Laura Healy
Mentor: Edward Gifford
Hartford Hospital University of Connecticut

Lauren Grimsley
Mentor: Eleftherios Xenos
UK Healthcare

Leah Gober
Mentor: Kyla Bennett
University of Wisconsin Hospitals & Clinics Authority

Rae Rokosh
Mentor: Karan Garg
NYU Langone Health

Razan Elsayed
Mentor: Beau Hawkins
OU Medical Center

Roberto Loanzon
Mentor: Mitchell Cox
Duke University Health System

Srihari Kumar Lella
Mentor: Nikoloas Zacharias
Massachusetts General Hospital

6. DATA QUALITY DASHBOARDS & REGIONAL REPORTS

The SVS PSO Best Practice Dashboards allow centers to review their performance and compare to regional and national benchmarks. The SVS PSO registry committees select outcome measures to be reported in the dashboards, which are distributed quarterly to SVS VQI members. The dashboards provide each center their individual performance, along with results for their region and SVS VQI overall (including the threshold for the 25th and 75th percentile). Results that are in the "top" 25th percentile are highlighted blue and those in the "bottom" 25th percentile are highlighted coral.

PVI CLAUDICATION

Procedure Timeframe: April 1, 2020 - March 31, 2021

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

Legend: Blue = "Top" 25th percentile **Coral = "Bottom" 25th percentile**

Category	Outcome/Complication	Your Center	Your Region	VQI Overall
Case Data				
	Number of Cases Reviewed	117	1935	12419
	Median Postop LOS (days)	0	0	0 [0|0|0|0|1]
	Median Total LOS (days)	0	0	0 [0|0|0|0|1]
Smoking				
	Never	10.3%	20.4%	14.8% [0|4|9.2|15.1|25.9]
	Prior	62.4%	49%	48.6% [31|40.8|50|60.4|71.4]
	Current	27.4%	30.6%	36.6% [14.4|25|36.3|48.1|57.8]
Preop ABI				
	Preop ABI/Toe Pressure Reported	81.2%	64%	75% [31.9|63.9|81.8|93.8|100]
Postop Events				
	MI	2.6%	0.3%	0.2% [0|0|0|0|0]
	Change in Renal Status	0%	0.4%	0.3% [0|0|0|0|0.6]
	Thrombosis	2.6%	0.4%	0.5% [0|0|0|0|2]
	Embolization	0.9%	0.3%	0.4% [0|0|0|0|1.4]
	Target Lesion Dissection	2.6%	1.7%	3.3% [0|0|0|3.8|10.2]
	Artery Perforation	2.6%	0.7%	0.6% [0|0|0|0|2.2]
	Access Site Hematoma	0%	1.9%	1.6% [0|0|0|2|5]
	Access Site Infection	0%	0.1%	0% [0|0|0|0|0]
	Unplanned Amputation	0%	0.3%	0.3% [0|0|0|0|0]
Discharge Medications				
	Antiplatelet+Statin	92.9%	92.9%	85.8% [66.8|81.1|89.9|97|100]
Discharge Destination				
	Home	96.6%	96.6%	97.8% [93.8|97.1|100|100|100]
	Rehab Unit	1.7%	1%	0.9% [0|0|0|0|2.3]
	Nursing Home	0%	1.1%	0.7% [0|0|0|0|2.6]
	Other Hospital	0%	0.1%	0.2% [0|0|0|0|0]
	Homeless	0.9%	0.2%	0.1% [0|0|0|0|0]
	Dead	0.9%	1%	0.4% [0|0|0|0|0.5]

PVI CHRONIC LIMB THREATENING ISCHEMIA

Procedure Timeframe: April 1, 2020 - March 31, 2021

Includes Peripheral Vascular Intervention (PVI) procedures for ischemic rest pain, ulcer/necrosis, non-healing amputation, both ulcer + non-healing amputation, or acute ischemia.

Legend: Blue = "Top" 25th percentile **Coral = "Bottom" 25th percentile**

Category	Outcome/Complication	Your Center	Your Region	VQI Overall
Case Data				
	Number of Cases Reviewed	337	3894	23642
	Median Postop LOS (days)	2	1	1 [0|0|1|2|4]
	Median Total LOS (days)	3	3	3 [0|0|2|4.5|7]
Smoking				
	Never	19.9%	30.3%	28.8% [13.5|21|27.6|34.5|43.8]
	Prior	51.6%	43.9%	41.4% [26.6|34.7|41.7|47.6|53.4]
	Current	28.5%	25.8%	29.7% [15.4|22.2|29.5|39.3|46.4]
Preop ABI				
	Preop ABI/Toe Pressure Reported	73%	67.7%	65.9% [27.9|48.1|70.6|84.1|91.9]
Postop Events				
	MI	0.6%	0.8%	0.8% [0|0|0|1|2.6]
	Change in Renal Status	2.1%	2.3%	1.9% [0|0|0|3.2|5.2]
	Thrombosis	1.8%	0.9%	1.2% [0|0|0|1.7|3.8]
	Embolization	0.3%	0.5%	0.8% [0|0|0|0.8|2]
	Target Lesion Dissection	6.2%	2.3%	4% [0|0|0.9|5.1|10.1]
	Artery Perforation	0.6%	0.4%	0.9% [0|0|0|0.7|2.4]
	Access Site Hematoma	3%	2.3%	2.2% [0|0|1.2|3.2|5.5]
	Access Site Infection	0%	0.2%	0.1% [0|0|0|0|0]
	Unplanned Amputation	3.3%	2.5%	3.1% [0|0|1|3.9|8.5]
Discharge Medications				
	Antiplatelet+Statin	92.3%	87.2%	81.8% [62.5|71.9|83.3|89.1|95.1]
Discharge Destination				
	Home	81.1%	79.9%	81.7% [69.2|76.7|82.8|88|94.8]
	Rehab Unit	13.2%	11.4%	7.9% [0|1.7|5.4|11.3|17.7]
	Nursing Home	4.2%	6.3%	7.3% [0|1.7|5.8|11|17.1]
	Other Hospital	0.6%	0.6%	1.4% [0|0|0|1.8|4]
	Homeless	0%	0.1%	0.1% [0|0|0|0|0]
	Dead	0.9%	1.6%	1.6% [0|0|0.8|2.4|3.6]

7. REGIONAL QUALITY GROUPS

SVS VQI has 18 regional quality groups based on geographic proximity (Figure 7.1). Regional quality group meetings are in 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 collaboration on quality improvement projects.

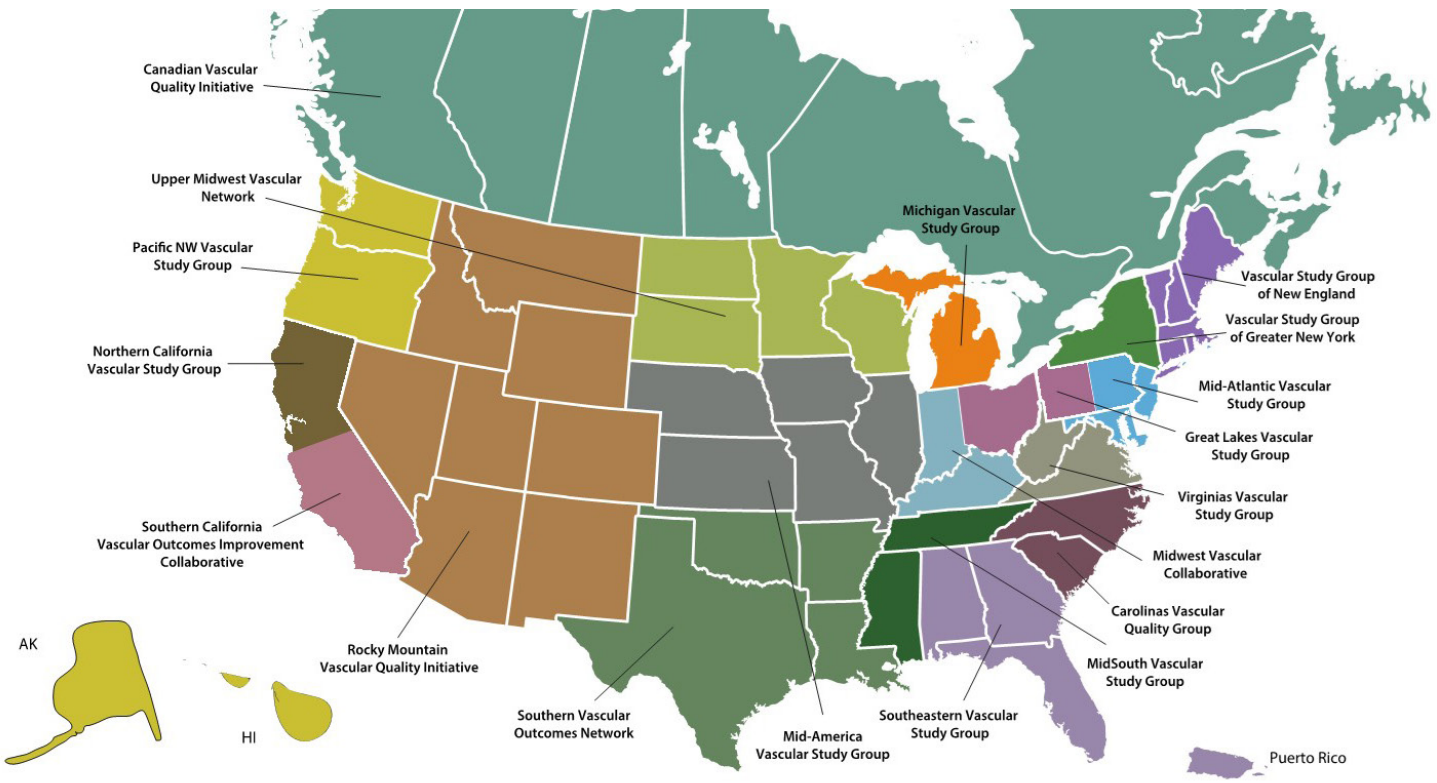


Figure 7.1: SVS VQI Regional Group Map

During each region's bi-annual meeting, data are reviewed and discussed by the membership. Many groups identify an area for improvement and launch region-wide efforts to improve care. Previous quality improvement projects 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 on projects using SVS VQI data. This process has helped the SVS PSO identify groups working on similar initiatives and facilitate networking opportunities. The SVS PSO provides various resources to assist SVS VQI centers with their QI projects.

Quality Improvement Projects

SVS VQI centers work on quality improvement projects which may be selected for presentation at the VQI Annual Meeting. These projects are often related to the National QI Initiatives, currently Endovascular AAA Longer Term Follow-Up Imaging and Discharge Medication; however, they can address any vascular topic supported by VQI data. The SVS PSO provides resources to assist SVS VQI centers with their QI projects.

Quality Improvement Tools

The SVS PSO, together with FIVOS, develops quality improvement 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 (presentations and videos available for attendees only)
- QI Supplemental Guide (for VQI members only)
- Educational Videos/Audio
- Sample Charters
- Case Studies
- 1:1 Mentoring

Participation Awards

The SVS PSO encourages provider and center engagement through a program of annual Participation Awards. Participation Awards are given based on long-term follow-up rates, regional meeting participation, quality improvement initiatives, and registry participation. The Participation Awards program encourages active involvement in the registries and QI activities. Certificates are distributed to centers receiving the maximum award level at the national meeting. All award levels are acknowledged during regional meetings.

Participating centers can earn up to three stars based on the following criteria:

- 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 work on quality improvement charters throughout the year. These projects are often related to the National QI Initiatives, currently Endovascular AAA Longer Term Follow-Up Imaging and Discharge Medication; however, they can address any vascular topic supported by VQI data. The following graphs are a historical review of QI charters 2018-2021 and their topics. *Other represents either a blend of topics (ex: LTFU and Documentation) or a different topic than labeled.

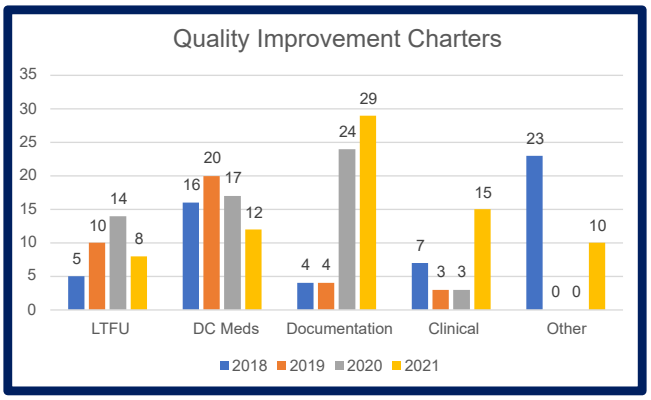


Figure 8.1 – Quality Improvement Projects to Date

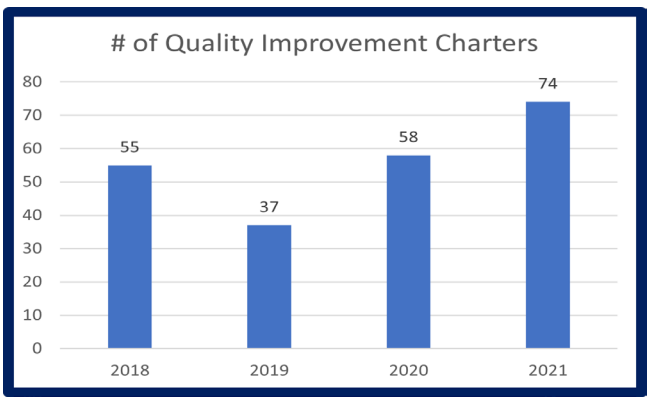


Figure 8.2 – Quality Improvement Projects to Date

9. NATIONAL QUALITY IMPROVEMENT INITIATIVES OPTIMAL DISCHARGE MEDICATIONS AND EVAR LONG-TERM FOLLOW-UP IMAGING

The VQI PSO chose to focus on discharge medications and EVAR follow-up imaging because these two 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.

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 VQI 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 and EVAR LTFU Imaging and are in the process of implementing your processes. Both initiatives are discussed in detail at regional meetings.

De Martino et al (J Vasc Surg), along with a growing body of literature demonstrating similar results, prompted the national VQI quality initiative to increase the appropriate use of statin and antiplatelet agents in vascular patients. Our goal is to have 100% of all eligible patients (i.e. those without contraindications to these medications) discharged on these medications after their vascular procedure. Overall VQI rates for discharge medications have been steadily tracking upward — VQI overall DC medication rate was 86% in 2021.

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 2018 was at 73% and VQI overall LTFU for 2019 was at 71%. We still have room for improvement to reach our goal.

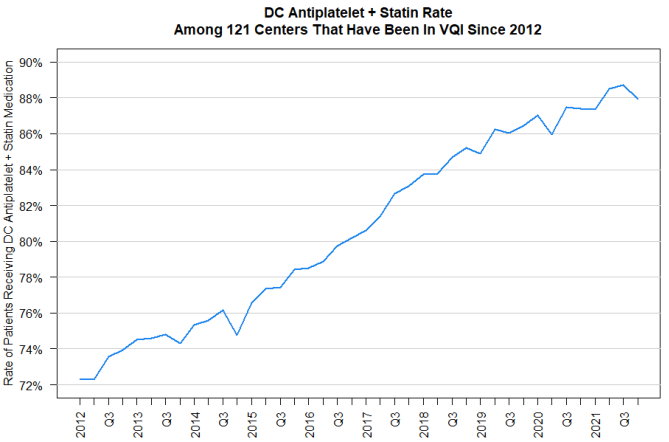


Figure 9.1 – Discharge Medications Rate for 121 SVS VQI Hospitals (2012 to Date).

Given COVID-19 challenges, a VQI PSO National LTFU Survey was sent to all VQI data managers to determine challenges and barriers for LTFU. The following three graphs depict questions and responses of the survey. Please note that *Other was a free text option that allowed data managers to type in any response that wasn't available. For additional information on the LTFU survey, please contact bwymer@svspso.org.

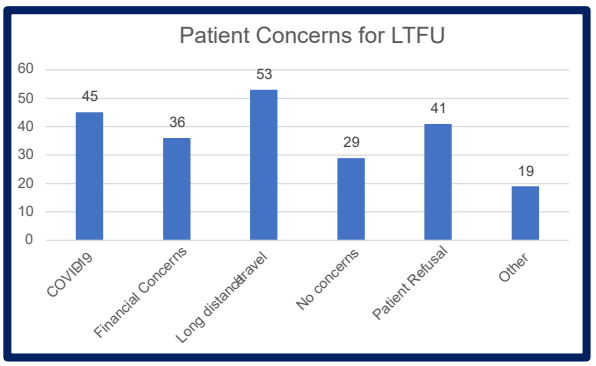


Figure 9.2 – LTFU Survey Results

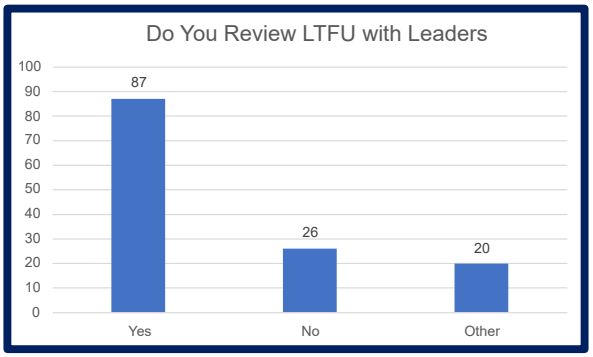


Figure 9.3 – LTFU Survey Results

9. NATIONAL QUALITY IMPROVEMENT INITIATIVES OPTIMAL DISCHARGE MEDICATIONS AND EVAR LONG-TERM FOLLOW-UP IMAGING (CONT.)

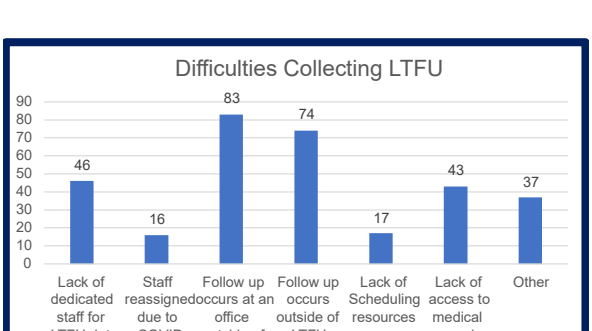


Figure 9.4 – LTFU Survey Results

Another excellent avenue of networking and communicating is the VQI Annual Meeting at the Vascular Annual Meeting (VQI@VAM). There are many opportunities to meet other VQI members and participants to discuss areas for improving quality care. The poster networking reception is just one example. Participants can share their QI projects, charters that have become posters, or other quality work from their center. It is an opportunity to learn from others including implementation strategies, challenges, and other ideas.

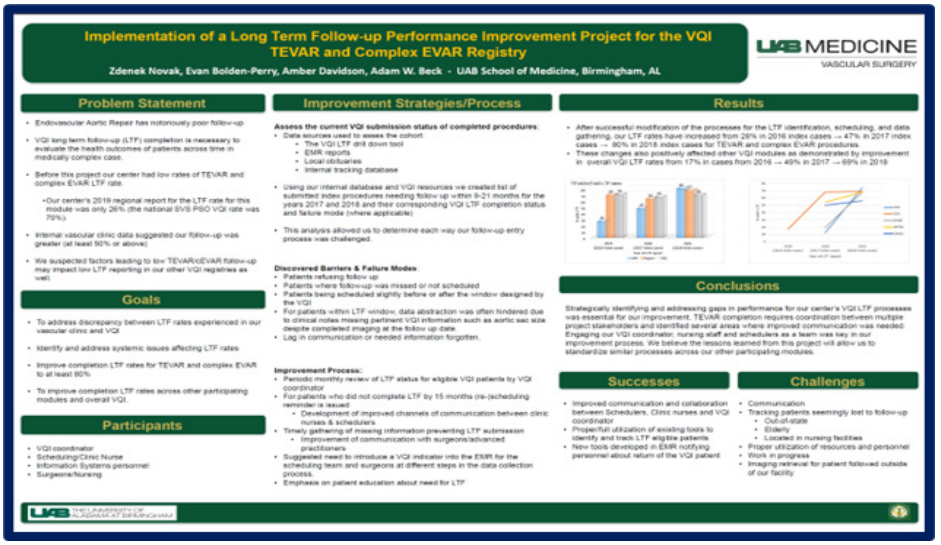


Figure 9.5 – The University of Alabama School of Medicine, Birmingham, AL

Two excellent posters on LTFU were presented at the 2021 VQI@VAM poster session.

The University of Alabama School of Medicine, Birmingham, AL presented ***'Implementation of a LTFU Performance Improvement Project for the VQI TEVAR and Complex EVAR Registry'***. They were able to improve their LTFU rates from 26% to 69%.

Stanford Health Care Stanford, CA presented ***'Sustaining High Performance in LTFU Care'***. They were able to improve their LTFU rates from 69% to 92%.

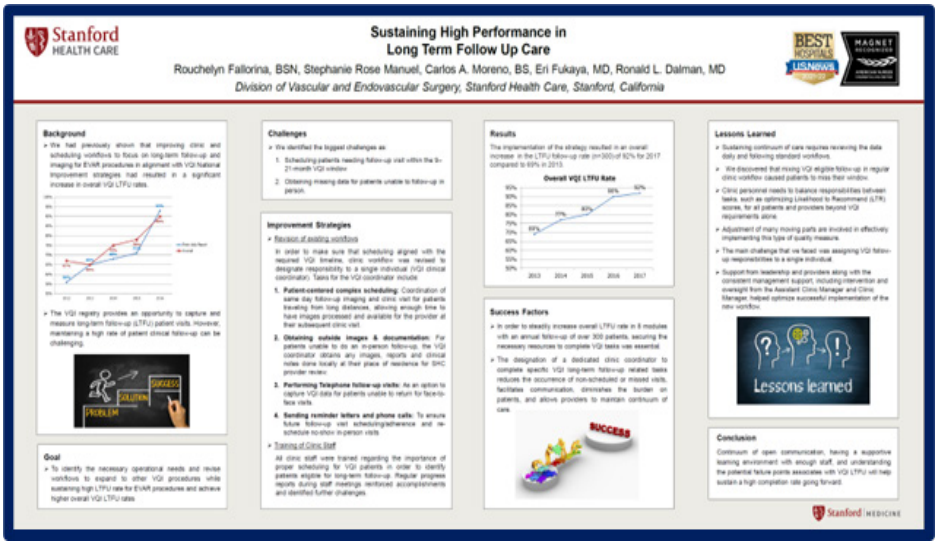


Figure 9.6 – Stanford Health Care, Stanford, CA

Experienced SVS VQI centers have applied registry data and implemented innovative approaches to improve success rates for the current national quality initiatives on Use of Discharge Medications and Endovascular AAA Long-term Follow-Up with Imaging. Given the various resources and support provided to you, our members, together, we can reach our goal for each of these initiatives.

10. SVS VQI DATA ANALYSIS

SVS VQI physicians may request de-identified datasets from each registry that they participate in for analysis. The SVS PSO Research Advisory Council (RAC) reviews, evaluates, and approves requests for datasets by investigators based on their application to the RAC. As of the end of April 2022, the RAC has approved over 900 projects, and of those, 495 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, RAC applications, previously approved projects, and more.

11. SVS CLINICAL PRACTICE GUIDELINES AND THE SVS VQI

SVS VQI data has been used to document compliance with SVS AAA Clinical Practice Guidelines (CPG) and to assess impact on outcomes. VQI data demonstrated that compliance with SVS CPG recommendations was associated with improved outcomes and should be encouraged for providers. Participation in the SVS VQI registries provides an objective assessment of performance and compliance with the SVS guidelines. SVS VQI provider and center reports may be used as a focus for quality improvement efforts (see Figure). Vascular Quality Initiative assessment of compliance with Society for Vascular Surgery CPG on the care of patients with abdominal aortic aneurysm was published in the September 2020 issue of the JVS.[1]

During the past year, another analysis has been done on compliance with treatment for extracranial cerebrovascular disease CPG. Compliance with carotid guidelines was found to be associated with a lower risk of inhospital stroke/death emphasizing the value of compliance. However, compliance with the guidelines was again found to be extremely variable highlighting an opportunity for improvement at select centers. VQI continues to plan to collaborate with the SVS Document Oversight Committee to analyze compliance with SVS CPG.

Enhanced Recover After Surgery (ERAS) has gained increased recognition throughout all the surgical specialties and has been embraced by vascular surgeons. In an effort to document and collect data on the impact of ERAS in vascular surgery, VQI has begun to revise our registries to include ERAS focused variables. Compliance with ERAS should improve care, enhance the patient experience and reduce resource utilization.

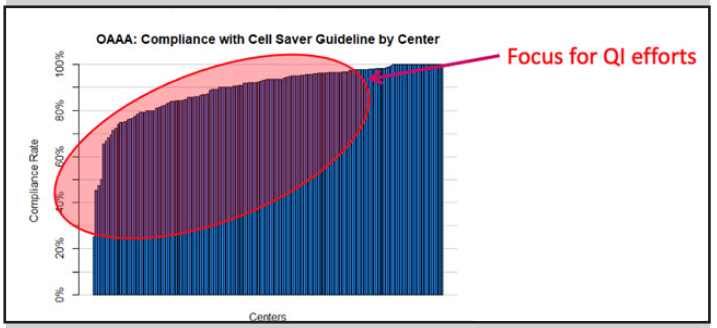


Figure 11.1 Center Compliance with SVS CPG on Cell Saver use with Open AAA Repair

12. COLLABORATION WITH SOCIETIES

Although VQI was begun primarily 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 thanks 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 Heart Association
- American Venous Forum
- Society for Vascular Medicine
- Society for Vascular Nursing
- Society for Vascular Ultrasound
- Vascular Access Society of the Americas

SVS | VQI

In collaboration with NCDR®

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.

Effective January 1, 2021, the ACC NCDR Peripheral Vascular Intervention (PVI) registry is now operated by SVS, 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 107 former NCDR PVI sites now participate in VQI. NCDR participants who have not yet joined the SVS VQI, may contact the SVS VQI account team by emailing vqi@fivoshealth.com, or by calling 603-298-6717, to discuss participation.

American Heart Association.

AMERICAN HEART ASSOCIATION and SOCIETY FOR VASCULAR MEDICINE
The SVS VQI and the Society for Vascular Medicine (SVM), in collaboration with the American Heart Association® (AHA) created and released the Vascular Medicine Consult Registry (VMC) in early 2020. Dr. Josh Beckman, Dr. Marc Bonaca, and former Association president Dr. Mark Creager are among those members serving on the VMC Steering Committee to provide scientific expertise and oversight. Dr. Randall DeMartino, MD and Dr. Michael R. Jaff, from the SVS serve as co-chairs of the VMC Steering Committee.
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.

The American Heart Association, a global force for longer, healthier lives, has a longstanding commitment to improving systems of care through its quality improvement programs such as its flagship Get With The Guidelines® (GWTG) program, promoting consistent adherence to evidence-based guidelines in hospital and healthcare settings across the U.S. 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

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.

SVS | VQI
In collaboration with NCDR®

American Venous Forum
Promoting venous and lymphatic health

American Heart Association.

SVU Society for Vascular Ultrasound

VASA Vascular Access Society of the Americas

Society for Vascular Medicine

13. CORPORATE SUPPORT

The operations of the SVS PSO are financed by fees paid by participating sites. New project development, including addition of new registries, quality reports, and improved functionality in SVS VQI has been made possible through generous unrestricted contributions by Quality Champion, Quality Partner and Quality Associate-level corporations. Corporate sponsors of the SVS PSO are listed below:

Quality Champions

BD

BARD has joined BD

GORE Creative Technologies

Boston Scientific

Quality Partners

3M KCI

14. IMPROVED STAKEHOLDER COMMUNICATIONS

New and Improved VQI.org
A new VQI.org experience is coming! The new and improved website will have a new look and feel, fresh content, and improved navigation.

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

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

VQI Risk Calculator
The VQI is actively working to update and add more Risk Calculators. We plan to give these valuable resources more prominence on the VQI website in the coming months.

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

Medical devices are an integral component of vascular healthcare. SVS VQI collects clinical data to help better understand device performance. 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 SVS VQI data for post-approval surveillance is consistent with the FDA vision of 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

Initiated in October 2014, this project has demonstrated the value of expanding surveillance to real-world device evidence with faster than expected enrollment while meeting FDA requirements. In partnership with Gore and Medtronic, the SVS PSO and M2S has completed enrollment of the one- year and five-year cohorts.

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

For more information, please contact: tevarproject@m2s.com

Transcarotid Artery Revascularization (TCAR) Surveillance Project

The TCAR Surveillance Project is designed to obtain more data about real-world outcomes of TCAR in comparison with CEA as performed by centers participating in the Vascular Quality Initiative (VQI). The TCAR Surveillance Project was evaluated by the US Food and Drug Administration (FDA) and found to be scientifically valid and clinically relevant. Based on this, reimbursement for TCAR procedures performed by centers participating in the VQI TCAR Surveillance Project was approved on Sept. 1, 2016, by the Centers for Medicare and Medicaid Services (CMS) under the current National Coverage Determination. For centers or providers to be reimbursed for performance of TCAR, they must participate and enter data in the VQI Carotid Artery Stent Registry. The TCAR Surveillance Project is directed by an SVS PSO Steering Committee that will make periodic analyses of outcomes collected in the VQI CAS and CEA Registries. The FDA recently issued an Approval For The Expansion Of The Indications For Use To Include Treatment Of Patients At Standard Risk For Adverse Events From Carotid Endartectomy.
https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfpma/pma.cfm?id=P140026S016

For more information on the TCAR Surveillance Project, please see Clinical Trials.gov:
SVS VQI TransCarotid Revascularization Surveillance Project 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 to review the performance of endovascular aortic stent grafts and real-world evidence.[1] 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 all 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. Data sources including the SVS VQI registry and Medicare claims were mentioned as potential sources/solutions for data collection. At present, 302 sites participate in the VQI EVAR registry. It would require additional

personnel and resources for VQI centers to ensure adequate follow up and data collection annually for 5+ years. VQI has the appropriate infrastructure in place – registry forms and data collection personnel are present at all sites. In order to obtain adequate data for analysis, it is not necessary to require all 302 centers to participate in prolonged post-EVAR data collection.

VASCULAR RESEARCH COLLABORATIVE (VRC) – 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, would require additional financial support to ensure annual follow up for 5-10 years. As many centers are performing 50-100 EVARs annually, this tiered approach would provide a large sample (>3000 annually) for developing an evidence-based analysis of device performance.

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.[2] 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.

In conclusion, 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 data to guide device evaluation and assess compliance with SVS clinical guidelines. SVS VQI looks forward to working with the FDA and industry partners to ensure that our patients receive the best treatment and the highest quality care.

1. USDA: US Food & Drug Administration. November 2-3, 2021: Circulatory System Devices Panel of the Medical Devices Advisory Committee Meeting Announcement. 2021 (cited 2022 Jan); Available from: https://www.fda.gov/advisory-committees/advisory-committee-calendar/november-2-3-2021-circulatory-system-devices-panel-medical-devices-advisory-committee-meeting.
2. Tsougranis G, Eldrup-Jorgensen J, Bertges D, Schermerhorn M, Morales P, Williams S, Bloss R, Simons J, Deery SE, Scali S, Roche-Nagle G, Mureebe L, Mell M, Malas M, Pullin B, Stone DH, Malone M, Beck AW, Wang G, Marinac-Dabic D, Sedrakyan A, Goodney PP. The vascular implant surveillance and interventional outcomes (VISION) coordinated registry network: An effort to advance evidence evaluation for vascular devices. Journal of vascular surgery. 2020;72:2153-2160

16. REGISTRY ASSESSMENT OF PERIPHERAL INTERVENTIONAL DEVICES (RAPID) UPDATE

RAPID is a public private partnership between professional society registries (Society for Vascular Surgery, American College of Cardiology and Society for Interventional Radiology), academia, industry and federal regulators including CMS and FDA. The FDA, through the Medical Device Epidemiology Network (MDEpiNet), has promoted the concept of CRNs to generate real-world evidence about medical device performance. The goal of RAPID is to promote the evaluation of peripheral vascular devices throughout the total product lifecycle.

Randomized controlled trials nested in registries

Over the past year, RAPID has focused on promoting the use of registries for randomized clinical trials. VQI has participated in and presented at two virtual think tanks sponsored by MDEpiNet RAPID. There is significant interest in using clinical registries, e.g. VQI, to nest clinical trials. By leveraging the existing infrastructure of case report forms and data collection methodology, there is marked increased efficiency by avoiding starting from a blank slate. In addition, current participation in the registry allows selection of appropriate sites - low and high volume centers, academic and rural, experienced trialists and a diverse patient population (including traditionally UnderRepresented In Medicine). The next think tank will explore specific use cases for peripheral vascular and aortic interventions.

VQI is one of the few cardiovascular registries that collects device identification details using the Global Unique Identification Database (GUDID). GUDID is an FDA administered database that is a reference catalog for all medical devices. By collecting GUDID on devices, VQI is able to accurately identify a device in conjunction with patient level clinical, anatomic and procedural details and correlate it with outcomes. This allows assessment of device performance. Specific device identification has been critically important in analyzing the Paclitaxel controversy and EVAR endograft performance. Unfortunately, the GUDID database is rife with missing and inaccurate data. In addition, if a company changes ownership the device usually remains under the name of original manufacturer and will be hard to identify. VQI has engaged Symmetrics® in an effort to improve the accuracy of device data in GUDID. Symmetrics has standardized device names, amended many inaccuracies in device data and corrected multiple Global Medical Device Nomenclature (GMDN).

17. INTERNATIONAL CONSORTIUM OF VASCULAR REGISTRIES (ICVR) UPDATE

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.

The ICVR is proud to announce that in 2022 it will complete a project entitled "ICVR Evaluation of EVAR Treatment of Ruptured AAA". The aim of this project is to evaluate the safety and effectiveness of EVAR devices used to treat rAAA (compared to open rAAA repair) in the ICVR registries, and to provide manufacturers of current EVAR devices with individual data about their device. The design of the included collection of data from 13 different countries participating in ICVR.

The central purpose of this project was to evaluate in-hospital mortality after EVAR for ruptured AAA in a multinational registry collaboration using mortality associated with standard open repair to establish a benchmark. The hypothesis is that EVAR for rAAA is associated with in-hospital survival that meets a performance goal derived from open rAAA repair. Given that untreated rAAA carries a mortality approaching 100%, the intent of this project is to focus specifically on survival to discharge. Further, the long-term safety and effectiveness of these EVAR devices has been extensively studied and established for elective AAA repair. The key to improving outcome after rAAA repair is improving initial survival, which is the major endpoint for this project.

ICVR | International Consortium of Vascular Registries

18. THE SVS VQI AND COMPLIANCE WITH THE EUMDR

The European Medical Device Regulation (EU MDR) was introduced in 2017 to ensure high standards of quality and safety for medical devices being used in Europe. It establishes a framework for medical device monitoring to ensure a high level of health and safety while supporting innovation. While the new European MDR includes pre-approval evaluation for medical device manufacturing, it adds a new total life-cycle reporting requirement to medical device regulation.

One of the most important but most challenging requirements of EU MDR is the active Post-Market Clinical Follow-up required to establish safety and performance during the total lifecycle of a device. Manufacturers must report such data to maintain their CE mark for each device by May 2020. Fivos and the Society for Vascular Surgery Vascular Quality Initiative (SVS VQI) recognize the importance of supporting manufacturers and regulators, both domestic and international, to evaluate the safety and performance of vascular devices currently being used in daily practice. SVS VQI collects much relevant data to provide the real-world evidence needed to meet the new EU MDR. "Manufacturers face significant challenges in collecting real-world clinical follow-up data about ALL their devices," said Jack Cronenwett, MD, CMO Fivos. "In fact, some companies are now considering the need to remove some currently CE-marked devices from the European market if they cannot obtain needed data. We are pleased to have supplied data from the SVS VQI to several manufacturers to help them successfully meet EU MDR requirements. Going forward, we believe the SVS VQI registry will be a primary data source to address current and future regulatory challenges faced by device manufacturers world-wide."

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/

19. TECHNOLOGY & REGISTRY DEVELOPMENTS

PATHWAYS Technology Highlights:

Procedure Record Comments - Comments may now be updated on submitted forms without having to revert the forms to incomplete.

Auto-Save before Timeout - PATHWAYS will save incomplete records in progress should PATHWAYS timeout due to inactivity.

Support Tab Enhancements
- Training Schedule - Register for upcoming PATHWAYS training webinars!
- Documents - Access critical registry documents quickly and easily!
  - Code list - List of registry eligible CPT and ICD-10 codes
  - Inclusion/Exclusion Criteria - Describes procedures to be included in each procedure registry as well as follow-up requirements
  - Data Dictionary - Complete list of all fields collected in the registry (active and retired) with dependencies and help text
  - Paper Form - Registry data forms that may be printed and used to manually capture registry data on paper

Data Download - Expanded functionality now provides the ability to filter by different types of date ranges and submission status (incomplete vs. submitted), change the column header format, and generate custom download files limited to selected fields of interest.

Registry Highlights:

New Reporting
- CAS Follow-up Outcomes Report
- EVAR Follow-up Outcomes Report (updated)
- CEA Follow-up Outcomes Report
- PVI Occlusive Disease Follow-up Outcomes Report

Across-Registry Revisions
- New Trainee & Other Assistant fields
- Revised Gender to Birth Sex
- Added COVID Vaccine fields

Hemodialysis Access registry
- Expanded endovascular data collection

Infra-inguinal Bypass registry
- Opioid data collection fields add to procedure and follow-up forms

Minor Revisions
- Endovascular AAA Repair - Access sheath size updates
- Thoracic and Complex EVAR - Update dependencies for Entry Flow and Dissection Date/Type, Access sheath size
- Carotid Endarterectomy - Stenosis and contralateral events
- Carotid Artery Stent - Stenosis and contralateral events
- Vascular Medicine Consult - Stenosis and contralateral events
- IVC Filter - Update 'other' device collection

Upcoming Registry Highlights:
- Major revisions to Infra and Supra-inguinal Bypass registries
- Major revision to Open AAA registry
- Follow-up Outcomes Reports for additional registries

20. FUTURE DEVELOPMENTS

In 2022-2023, the SVS VQI plans to support improved care and promote patient safety in the following areas:

- Infra-Inguinal and Supra-Inguinal registries revisions will be completed in 2022
- Open AAA Registry and Lower Extremity Amputation Registry will be revised in 2022
- Enhanced Long Term follow up reporting capabilities for all registries in 2022
- The VQI has engaged Symmetric Health Solutions to provide additional information to cleanse and augment device data pulled into the VQI, through an integration with the Global Unique Device Identification Database (GUDID)
- As Enhanced Recovery Protocols gain traction in Vascular, the VQI will add variables to track the efficacy of these pathways in several of the VQI modules
- The VQI will begin exploring adding formal Frailty variables to registries in 2022, with a goal of implementation in 2023

APPENDICES

APPENDIX A— VQI SITES LISTED IN ALPHABETICAL ORDER (AS OF

Abbott Northwestern Hospital (Allina) MN
Abington Memorial Hospital PA
Abrazo Arrowhead Campus AZ
AdventHealth Celebration FL
AdventHealth Ocala FL
AdventHealth Orlando FL
AdventHealth Tampa FL
AdventHealth Waterman FL
Adventist Health St. Helena CA
Adventist Healthcare White Oak Medical Center MD
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
Alamance Regional Medical Center NC
Albany Medical Center NY
Albany Vascular Specialist Center GA
All Saints Hospital WI
Allegheny Clinic Vascular Surgery PA
Altru Hospital ND
AMITA Health Adventist Medical Center La Grange IL
AMITA Health Alexian Brothers Medical Center IL
AMITA Health Resurrection Medical Center IL
AMITA Health Saint Joseph Medical Center Joliet IL
AMITA Health St. Alexius Medical Center, Hoffman Estates IL
Anmed Health SC
Arizona Endovascular Center AZ
Arizona Vascular Specialists, LLC AZ
Arkansas Heart Hospital AR
Arkansas Heart Hospital Encore AR
Arnot Health NY
Artery and Vein Institute PA
Asante Rogue Regional Medical Center OR
Ascension Borgess Hospital MI
Ascension Genesys Hospital MI
Ascension Providence Hospital (TX) TX
Ascension Providence Hospital, Novi Campus MI
Ascension Providence Hospital, Southfield Campus MI
Ascension Sacred Heart Hospital Bay FL
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. John Hospital MI
Ascension St. John OK
Ascension St. Mary's Hospital MI
Ascension Via Christi Hospitals Wichita KS
Ashland Hospital Corporation d/b/a King's Daughters Medical Center KY
Aspirus Wausau Hospital, Inc. WI
Associates in Vascular Care NJ
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 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-University Medical Center Phoenix AZ
Banner-University Medical Center Tucson AZ
Baptist Health Deaconess Madisonville, Inc. KY
Baptist Health Lexington Hardin KY
Baptist Health Lexington KY
Baptist Health Louisville KY
Baptist Health Paducah KY
Baptist Hospital of Miami FL
Baptist Memorial Hospital TN
Barnes Jewish Hospital MO
Bartow Regional Medical Center FL
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
Bayshore Medical Center NJ
Baystate Medical Center MA
Beaufort Memorial Hospital SC
Beaumont Royal Oak MI
Beebe Medical Center DE
Bellin Memorial Hospital, Inc. WI
Berkeley Medical Center WV
Berkshire Medical Center MA
Beth Israel Deaconess Medical Center MA
Beth Israel Medical Center NY
Bethesda Hospital East FL
Bethesda Hospital West FL
Bethesda North Hospital OH
Birmingham St. Vincent's East Hospital AL
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
Bronson Battlecreek Hospital MI
Bronson Methodist Hospital MI
Brooklyn Methodist Hospital NY
Brookwood Baptist Medical Center AL
Bryan Medical Center NE
BSA Hospital, LLC TX
Buffalo General Medical Center NY
Butler Memorial Hospital PA
Camden Clark Medical Center WV
Cape Canaveral Hospital FL
Cape Cod Hospital MA
Cape Fear Valley Health NC
Capital Health Medical Center-Hopewell NJ
Capital Health Regional Medical Center NJ
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
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
Centerpoint Medical Center MO
CentraCare Health MN
Central Florida Regional Hospital FL
Central Maine Medical Center ME
Central Washington Health Services Association WA
CGH Medical Center IL
Chandler Regional Medical Center AZ
Charleston Area Medical Center WV
Charlton Memorial Hospital MA
Chesapeake Regional Medical Center VA
Chester County Hospital PA
CHI Saint Joseph Health - Saint Joseph Hospital KY
CHI St. Joseph Health London KY
CHI St. Luke's Health TX
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
CISSSO Outaouais QC
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
Columbia St. Mary's Hospital Milwaukee, Inc. WI
Columbia St. Mary's Hospital Ozaukee, Inc. WI
Columbia Surgical Services, Inc. MO
Columbia University Irving Medical Center NY
Columbus Regional Hospital IN
Community Heart and Vascular Hospital IN
Community Hospital East IN
Community Hospital South 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
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
Deaconess Midtown Hospital IN
Deborah Heart and Lung Center NJ
Decatur Memorial Hospital IL
Dell Seton Medical Center at the University of Texas TX
Delray Medical Center FL
Desert Regional Medical Center CA
Diagnostic Imaging of Milford CT
DLP Conemaugh Memorial Medical Center, LLC PA
DMC Harper University Hospital MI
Doctors Hospital at Renaissance TX
Doctors Hospital OH
Dominican Hospital CA
Doylestown Hospital PA
Dr. Ricardo Vasquez, MD IN
Duke Raleigh Hospital NC
Duke University Medical Center NC
East Alabama Medical Center AL
East Jefferson General Hospital LA
East Tremont Vascular Health Care, PLLC NY
Edward Hospital IL
Einstein Medical Center Montgomery PA
Eisenhower Medical Center CA
El Camino Health CA
Elkhart General Hospital IN
Elliot Health System NH
Elmbrook Memorial WI
Elmhurst Memorial Hospital IL
Emanate Health Inter-Community Hospital CA
Emanate Health Queen of the Valley Hospital CA
Emanuel Medical Center CA
Emory St.Joseph's Hospital GA
Englewood Hospital and Medical Center NJ
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
Firelands Regional Medical Center OH
Flagler Hospital FL
Flagstaff Medical Center AZ
Flint Hills Heart, Vascular, Vein Clinic, LLC Ks
Florida Hospital Memorial Medical Center FL
Florida Hospital Zephyrhills FL
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
Franklin Hospital WI
Fresno Heart & Surgical Hospital CA
Froedtert Health WI
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
Gilvydis Vein Clinic IL
Glens Falls Hospital NY
Global Neuroscience Institute at Crozer PA
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
Guthrie Clinic PA
Hackensack University Medical Center NJ
Halifax Hospital Medical Center FL
Halifax Infirmary Roble Street Entrance - QEII NS
Harborview Medical Center WA
Harlingen Medical Center TX
Harrison Medical Center WA
Hartford Hospital CT
HCA Houston Healthcare Clear Lake TX
HCA Houston Healthcare Conroe TX
HCA Houston Healthcare Kingwood TX
HCA Houston Healthcare Medical Center TX
HCA Houston Healthcare North Cypress TX
HCA Houston Healthcare Northwest TX
HCA Houston Healthcare Pearland TX
HCA Houston Healthcare Southeast TX
HCA Houston Healthcare Tomball TX
Health Park Medical Center FL
HealthPartners,Inc. MN
Heart Care Consultants, LLC PA
Henrico Doctors' Hospital VA
Henry Ford Allegiance Health MI
Henry Ford Hospital, Detroit MI MI
Henry Ford Hospital, West Bloomfield MI MI
Henry Ford Macomb Hospital MI
Heritage Valley Beaver PA
Hill Country Memorial Hospital TX
Hillcrest Hospital South OK
Holmes Regional Medical Center FL
Holston Valley Medical Center TN
Holy Cross Hospital FL
Holy Name Medical Center NJ
HonorHealth Deer Valley Medical Center AZ
HonorHealth Scottsdale Osborn Medical Center AZ
HonorHealth Scottsdale Thompson Peak Medical Center AZ
Horizon Vascular Specialists MD
Houston Methodist Baytown Hospital TX
Houston Methodist Clear Lake Hospital TX

APPENDIX A— VQI SITES LISTED IN ALPHABETICAL ORDER (AS OF 6/1/2021)

Houston Methodist Hospital TX
Houston Methodist Sugar Land Hospital TX
Houston Methodist The Woodlands Hospital TX
Houston Methodist West Hospital TX
Houston Methodist Willowbrook Hospital TX
Huntington Hospital CA
Inova Alexandria Hospital VA
Inova Fair Oaks Hospital VA
Inova Fairfax Hospital VA
Inova Loudoun Hospital VA
Inova Mount Vernon Hospital VA
INTEGRIS Baptist Medical Center, Inc. OK
Intermountain Medical Center UT
IU Health - Arnett Hospital IN
IU Health - Ball Memorial Hospital IN
IU Health - Bloomington Hospital IN
IU Health - Methodist IN
IU Health - Saxony Hospital IN
IU Health - West Hospital IN
Jackson Madison County General Hospital TN
Jackson Memorial Hospital FL
Jane Phillips Medical Center OK
Javon Bea Hospital - Riverside Campus IL
Jersey Shore University Medical Center NJ
JFK Medical Center NJ
Jobst Vascular Institute OH
John Sealy Hospital, UTMB TX
Johns Hopkins Bayview Medical Center MD
Johnson City Medical Center TN
Johnston-Willis Hospital VA
Kadlec Regional Medical Center WA
Kansas Heart Hospital KS
Kaweah Delta Medical Center CA
Kennedy University Hospital NJ
Kennestone Hospital GA
Kent Hospital RI
Kettering Health Dayton OH
Kettering Health Hamilton OH
Kettering Health Main Campus OH
Kootenai Health ID
Lakeland Regional Medical Center FL
Lakeview Regional Medical Center LA
Lancaster General Hospital PA
Lawrence + Memorial Hospital CT
Legacy Health OR
Lehigh Valley Hospital PA
Lenox Hill Hospital NY
Lexington Medical Center SC
Loma Linda University Medical Center CA
Long Island Jewish Medical Center NY
Los Angeles County Harbor - UCLA Medical Center CA
Los Robles Medical Center CA
Lovelace Medical Center NM
Loyola University Medical Center IL
Lutheran Medical Center CO
Lyerly Baptist Neurosurgery FL
Lynchburg General Hospital VA
M Health Fairview Clinic - Woodwinds MN
MacNeal Hospital IL
Maimonides Medical Center NY
Main Line Health's subsidiary - Riddle Hospital PA
Main Line Health's subsidiary, Main Line Hospitals, Inc. - Bryn Mawr Hospital PA
Main Line Health's subsidiary, Main Line Hospitals, Inc. - Lankenau Medical Center PA
Main Line Health's subsidiary, Main Line Hospitals, Inc. - Paoli Hospital PA
Maine Medical Center ME
MaineGeneral Medical Center ME
Manatee Memorial Hospital FL
Mansfield Hospital OH
Marietta Memorial Hospital OH
Marin General Hospital CA
Marion General Hospital OH
Marshall Medical North AL
Marshall Medical South AL
Marshfield Clinic Health System, Inc. WI
Mary Washington Hospital VA
Massachusetts General Hospital MA
Maury Regional Medical Center TN
Mayo Clinic Arizona AZ
Mayo Clinic Florida FL
Mayo Clinic Health System - Franciscan Healthcare, Inc. (in La Crosse) WI
Mayo Clinic Hospital - Rochester MN
Mayo Clinic Northwest Wisconsin WI
McKay-Dee Hospital UT
McKenzie-Willamette Medical Center OR
McLaren Bay Region MI
McLaren Flint MI
McLaren Greater Lansing MI
McLaren Macomb MI
McLaren Northern Michigan MI
McLaren Port Huron MI
McLeod Regional Medical Center SC
Mease Countryside Hospital FL
Medical Center Hospital TX
Medical Center Navicent Healthcare GA
Medical City Dallas TX
Medical City Denton TX
Medical City Fort Worth TX
Medical City Plano TX
Medical Faculty Associates, Inc DC
Medical University Hospital Authority SC
Medstar Cardiology Associates DC
Medstar Franklin Square Medical Center MD
Medstar Georgetown University Hospital DC
Medstar Good Samaritan Hospital MD
Medstar Harbor Hospital MD
Medstar Montgomery Medical Center MD
Medstar Southern Maryland Hospital Center MD
Medstar Union Memorial Hospital MD
Medstar Washington Hospital Center DC
Memorial Health University Medical Center GA
Memorial Hermann Greater Heights Hospital TX
Memorial Hermann Katy Hospital TX
Memorial Hermann Memorial City Medical Center TX
Memorial Hermann Northeast Hospital TX
Memorial Hermann Southeast Hospital TX
Memorial Hermann Southwest Hospital TX
Memorial Hermann Sugar Land TX
Memorial Hermann Texas Medical Center TX
Memorial Hermann The Woodlands TX
Memorial Hospital at Gulfport MS
Memorial Hospital Belleville IL
Memorial Hospital Central CO
Memorial Hospital Jacksonville FL
Memorial Hospital of Carbondale IL
Memorial Hospital of Laramie County d/b/a Cheyenne Regional Medical Center WY
Memorial Hospital of South Bend IN
Memorial Hospital Pembroke FL
Memorial Hospital West FL
Memorial Medical Center IL
Memorial Regional Hospital FL
Memorialcare Long Beach Medical Center CA
Memorialcare Orange Coast Medical Center CA
Memorialcare Saddleback Medical Center CA
Menorah Medical Center KS
Mercy Fitzgerald PA
Mercy Health - Anderson Hospital OH
Mercy Health - Fairfield Hospital OH
Mercy Health - Lourdes Hospital KY
Mercy Health - St. Elizabeth Youngstown Hospital OH
Mercy Health - The Jewish Hospital OH
Mercy Health - West Hospital OH
Mercy Health Saint Mary's MI
Mercy Hospital (Allina) MN
Mercy Hospital Springfield MO
Mercy Hospital St. Louis MO
Mercy Medical Center - Oshkosh WI
Mercy Medical Center MD
Mercy Medical Center, Cedar Rapids, Iowa IA
MercyOne Des Moines Medical Center IA
MercyOne Siouxland Medical Center IA
Meritus Medical Center MD
Methodist Dallas Medical Center TX
Methodist Germantown Hospital TN
Methodist Richardson Medical Center TX
Methodist University Hospital TN
MetroHealth Medical Center OH
Miami Vein Center FL
Michigan Vascular Center MI
Middlesex Hospital CT
MidHudson Regional Hospital NY
Midland Memorial Hospital TX
MidState Medical Center CT
Midwest Aortic & Vascular Institute, P.C. MO
Midwest Institute Minimally Invasive Therapies IL
Mission Hospital NC
Mission Hospital-Mission Viejo CA
Mississippi Baptist Medical Center MS
Mobile Infirmary AL
Monongalia County General Hospital Company d/b/a Mon Health Medical Center WV
Montefiore Medical Center NY
Monument Health Rapid City Hospital, Inc. SD
Morton Plant Hospital FL
Morton Plant North Bay Hospital FL
Mosaic Life Care MO
Mount Auburn Hospital MA
Mount Carmel East Hospital OH
Mount Carmel Grove City Hospital OH
Mount Carmel St. Ann's Hospital OH
Mount Sinai Hospital NY
Mount Sinai Medical Center FL
MultiCare Deaconess Hospital WA
MultiCare Good Samaritan Hospital WA
MultiCare Tacoma General Hospital WA
Munson Medical Center MI
MyMichigan Health - Midland MI
Nashville Vascular and Vein Institute TN
Nazareth Hospital PA
Nebraska Medicine NE
Nebraska Methodist Hospital NE
New Hanover Regional Medical Center NC
Newark Beth Israel Medical Center NJ
Newton-Wellesley Hospital MA
North Alabama Medical AL
North Florida Regional Medical Center FL
North Fulton Hospital, Inc. GA
North Memorial Health Hospital MN
North Mississippi Medical Center MS
North Okaloosa Medical Center FL
North Shore University Hospital NY
NorthBay Medical Center CA
Northeast Georgia Medical Center, Inc. GA
Northeast Methodist Hospital TX
NorthShore Hospital IL
Northside Hospital Atlanta GA
Northside Hospital Cherokee GA
Northside Hospital Forsyth GA
Northside Hospital Gwinnett GA
Northwest Community Hospital IL
Northwestern Medicine Central DuPage Hospital IL
Northwestern Medicine Lake Forest Hospital IL
Northwestern Memorial Hospital IL
Norton-Audubon KY
Norton-Brownsboro Hospital KY
Norton-Downtown KY
Norwalk Hospital CT
Novant Health Forsyth Medical Center NC
Novant Health Matthews Medical Center NC
Novant Health Presbyterian Medical Center NC
NYU Langone Medical Center NY
NYU Winthrop Hospital NY
Oaklawn Hospital MI
Ocala Regional Medical Center FL
Ocean Medical Center NJ
Ochsner Medical Center LA
Ogden Regional Medical Center UT
Oklahoma Heart Hospital South, LLC OK
Oklahoma Heart Hospital, LLC OK
Oklahoma Heart Institute at Hillcrest Medical Center OK
Orange Regional Medical Center NY
Oregon Health & Science University OR
Oregon Vascular Specialists, LLC OR
Orlando Health, Inc. Dr. P. Phillips Hospital FL
Orlando Health, Inc. Health Central Hospital FL
Orlando Health, Inc. Orlando Regional Medical Center FL
Orlando Health, Inc. South Lake Hospital FL
Orlando Health, Inc. South Seminole Hospital FL
OSF Heart of Mary Medical Center IL
OSF Saint Anthony Medical Center IL
OSF Saint Francis Medical Center IL
OSF St. Joseph Medical Center IL
OU Medical Center OK
Our Lady of Lourdes Heart Hospital LA
Our Lady of Lourdes Memorial NY
Our Lady of Lourdes Regional Medical Center LA
Our Lady of the Lake Hospital, Inc. LA
Overlake Medical Center WA
Overlook Medical Center NJ
Owensboro Health Regional Hospital KY
Palm Beach Gardens Medical Center FL
Palo Alto Medical Foundation CA
Parkview Medical Center CO
Parkview Regional Medical Center IN
Parkwest Medical Center TN
PeaceHealth Riverbend Medical Center OR
PeaceHealth Southwest Medical Center WA
PeaceHealth St. Joseph Medical Center WA
Penn Presbyterian Medical Center PA
Penn State Health Holy Spirit Medical Center PA
Penn State Health Milton S. Hershey Medical Center PA
Penn State Health St. Joseph's Medical Center PA
Pennsylvania Hospital PA
Peripheral Vascular Associates TX
Peter Lougheed Centre AB
Phoebe Putney Memorial Hospital GA
Piedmont Athens Regional Medical Center GA
Piedmont Hospital GA
Pima Vascular AZ
PineHurst Surgical NC
Placentia-Linda Hospital CA
Porter Adventist Hospital CO
Portsmouth Regional Hospital NH
Pottstown Hospital PA
Premier Vascular, LLC IL
Presbyterian Hospital NM
Presbyterian/St. Luke's Medical Center CO
Princeton Baptist Medical Center AL
Prisma Health Richland SC
Providence Holy Cross Medical Center CA
Providence Hospital - Rochester MI
Providence Hospital (AL) AL
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. Mary Medical Center (WA) WA
Providence St. Peter Hospital WA
Providence St. Vincent Medical Center OR
Providence Tarzana Medical Center CA
Queens NY
Radiology Associates-Fox Valley WI
Raleigh General Hospital WV
Rapides Regional Medical Center LA
Redlands Community Hospital CA
Redmond Regional Medical Center GA
Regional Medical Centers of Orangeburg and Calhoun Counties SC
Reid Health IN
Rex Hospital, Inc. NC
Rhode Island Hospital RI
Rio Grande Regional Hospital TX
Riverside Community Hospital CA
Riverside Medical Center IL
Riverside Methodist Hospital OH
Riverside Regional Medical Center VA
Riverview Medical Center NJ
Rockledge Regional Medical Center FL
Roper St. Francis SC
Rose Medical Center CO
Rush University Medical Center IL
Rutgers, The State University of New Jersey for Robert Wood Johnson Medical School NJ

APPENDIX A— VQI SITES LISTED IN ALPHABETICAL ORDER (AS OF 6/1/2021)

Sacred Heart Emerald Coast FL
Sacred Heart Hospital of the Hospital Sisters of the Third Order of St. Francis WI
Sacred Heart Pensacola FL
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
San Antonio Vascular and Endovascular Clinic TX
San Diego Vascular Center CA
Sanford Bemidji Medical Center MN
Sanford Clinic Vascular Associates SD
Sanford Medical Center Fargo ND
Sanger Heart and Vascular Institute NC
Santa Clara Valley Medical Center 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 Vascular Surgery WA
Self Regional Health SC
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
Sequoia Hospital CA
Shannon Medical Center TX
Sharp Grossmont Hospital CA
Sharp Memorial Hospital CA
Shelby Baptist Medical Center AL
Sierra Vista Regional Medical Center CA
Singapore General Hospital N/A
Slidell Memorial Hospital LA
South Florida Baptist FL
South Georgia Medical Center GA
South Miami Hospital FL
Southeast Georgia Health System, Inc. - Brunswick Campus GA
Southern Ocean Medical Center NJ
Southside Hospital NY
Southwest Healthcare System CA
Space Coast Vascular FL
Spartanburg Regional SC
Spectrum Health Hospital MI
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. Agnes Hospital MD
St. Anthony Community Hospital NY
St. Anthony Lakewood CO
St. Anthony's Hospital-FL FL
St. Anthony's Medical Center MO
St. Bernardine Medical Center CA
St. Bernards Medical Center AR
St. Charles Health System, Inc. OR
St. Clair Hospital PA
St. Dominic's Memorial Hospital and Medical Associates MS
St. Elizabeth Medical Center MA
St. Elizabeth's Medical Center WI
St. Francis Hospital - Milwaukee WI
St. Francis Hospital - Wilmington DE
St. Francis Hospital NY
St. Francis Medical Center-WA WA
St. George Regional Hospital UT
St. John Macomb Oakland MI
St. John's Health Center CA
St. John's Hospital IL
St. John's Regional Medical Center CA
St. Joseph - Orange CA
St. Joseph Hospital - Milwaukee WI
St. Joseph Hospital (Eureka) CA
St. Joseph Medical Center MO
St. Joseph Mercy Health System MI
St. Joseph's Hospital and Medical Center AZ
St. Joseph's Hospital North FL
St. Joseph's Hospital South FL
St. Joseph's Hospital-FL FL
St. Joseph's Medical Center of Stockton CA
St. Joseph's Medical Center-WA WA
St. Luke's Campus NY
St. Luke's Health System, Ltd. ID
St. Luke's Hospital - Allentown Campus PA
St. Luke's Hospital - Anderson 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 Methodist Hospital IA
St. Luke's-Roosevelt Hospital Center NY
St. Mary Corwin Medical Center CO
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 Hospital - AZ AZ
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 Anderson IN
St. Vincent Evansville IN
St. Vincent Healthcare MT
St. Vincent Heart Center of Indiana, LLC IN
St. Vincent Hospital and Health Center, Inc. IN
St. Vincent Hospital of the Hospital Sisters of the Third Order of St. Francis WI
St. Vincent's Birmingham AL
St. Vincent's Medical Center - Clay County FL
St. Vincent's Medical Center CT
St. Vincent's Medical Center- Riverside FL
St. Vincent's Medical Center- Southside FL
Stafford Hospital VA
Stamford Hospital CT
Stanford Health Care CA
Stanford Health Care-ValleyCare CA
Staten Island University Hospital - North Site NY
Steward Good Samaritan Medical Center, Inc. MA
Steward St. Anne's Hospital Corporation MA
Steward Trumbull Memorial Hospital,Inc OH
Stony Brook University Medical Center NY
Straub Medical Center HI
Suburban Hospital MD
Summa Health System OH
Superior Vein Care, PLLP ID
Surgical Specialists of Central Florida FL
Swedish Cherry Hill WA
Swedish First Hill WA
SwedishAmerican Hospital IL
Tallahassee Memorial HealthCare, Inc FL
Tampa General Hospital FL
Tenet Florida Physicians Services FL
Terre Haute Regional Hospital IN
Terrebonne General Medical Center LA
Texas Health Harris Methodist Fort Worth TX
Texas Health Presbyterian Hospital Dallas TX
Texas Health Presbyterian Hospital Denton TX
The Christ Hospital OH
The Emory Clinic GA
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 Medical Center of Aurora CO
The Methodist Medical Center of Illinois IL
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 Southern California on behalf of its Keck Medicine of USC CA
The University of Texas Southwestern Medical Center - Cerebrovascular Group TX
The University of Texas Southwestern Medical Center TX
The Valley Hospital NJ
The Vascular Care Group MA
The Vein and Vascular Institute of Tampa Bay FL
Thomas Jefferson University Hospital PA
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
United Health Services Hospitals, Inc. NY
United Hospital (Allina) MN
United Hospital Center WV
Unity Hospital (Allina) MN
UnityPoint Health - Meriter Hospital WI
UnityPoint Health Des Moines IA
University Hospital NY
University Hospitals Ahuja Medical Center OH
University Hospitals Cleveland Medical Center OH
University Of Alabama Medical Center AL
University of Arizona Medical Center AZ
University of Arkansas for Medical Sciences AR
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 New Mexico NM
University of North Carolina Hospitals NC
University of Oklahoma School of Community Medicine OK
University of Pennsylvania PA
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 (Montlake Campus) WA
University of Washington Medical Center (Northwest Campus) 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
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
Venice Regional Bayfront Hospital FL
Verde Valley Medical Center AZ
VHS of Arrowhead,Inc. d/b/a Abrazo Arizona Heart Hospital AZ
Via Christi Hospital Pittsburg KS
Vidant Medical Center NC
Virginia Mason WA
VVAS - Varicose Vein and Aesthetic Solutions AZ
Wadley Regional Medical Center TX
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
Waukesha Memorial Hospital WI
Wayne UNC Healthcare NC
Weill Cornell University Medical Center NY
WellSpan Surgery Center PA
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
White Plains Hospital NY
White Square Vascular Surgery MD
Williamson Medical Center TN
Willis-Knighton North LA
Winchester Medical Center VA
Winter Haven Hospital FL
Yale New Haven Hospital CT
Yavapai Regional Medical Center AZ
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.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—FIVOS (FORMERLY MEDSTREAMING/M2S) CLINICAL PLATFORM

The SVS Vascular Quality Initiative is built on Fivos PATHWAYS® clinical registry platform, allowing users to track, measure, and analyze clinical information, promote collaboration, objectively drive decisions, and optimize performance.

PATHWAYS is a secure, cloud-based solution that enables physicians, institutions, clinical data managers, and researchers to collect, manage, analyze, and disseminate their clinical data to achieve optimal outcomes. 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/or modified.

About Fivos

Fivos was formed in 2021 by the planned combination of two highly complementary businesses, Medstreaming and M2S. Fivos offers specialty-based workflow reporting applications for providers, registry solutions and support for medical societies, and custom data sets for device manufacturers that advance innovation.

At Fivos, we believe in healthcare IT innovation that enables proactive patient care and improves the quality of healthcare. Combining decades of industry experience, a thorough understanding of data science, and a large dose of curiosity, we are committed to empowering healthcare organizations to leverage data to create efficiencies, manage costs, and improve outcomes. For more information, visit www.fivoshealth.com.

SVS | PSO

PATIENT SAFETY ORGANIZATION