

Vascular Quality Initiative[®]

Year in Review

Since last June, VQI added 47 new centers and now comprises 377 centers, over 2,900 physicians, and nearly 300,000 procedures in its 12 quality improvement registries. In addition to its continued growth, VQI expanded its activities in many areas, including:

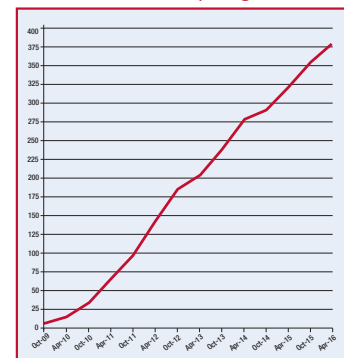
- VQI ANNUAL MEETING.** Starting this year, VQI will hold an Annual Meeting in conjunction with SVS VAM, which will feature guidance from QI experts, a QI toolkit, and successful projects from individual centers. The 17 VQI Regional Quality Groups continued to hold biannual meetings where members analyze variation across centers to identify best practices and opportunities for QI projects.
- VQI PARTICIPATION AWARD.** A new program was instituted this year to recognize VQI member centers for excellence in one-year follow up reporting, Regional Quality Group meeting participation and multiple registry enrollment. Of eligible centers, 58% received 1, 2 or 3 "Stars" based on their level of participation, as listed on the VQI website.
- QUALITY IMPROVEMENT REPORTS.** The SVS PSO distributed 4 Center-level and 4 Physician-level reports this year, which identified specific opportunities for improvement related to reducing length of stay, infection, stroke and hematoma rate, and improving smoking cessation, medical management and appropriate patient selection.

- NATIONAL RESEARCH PROJECTS.** This year the SVS PSO Research Advisory Committee (RAC) approved 64 national research projects submitted by 51 unique VQI investigators in 26 centers, representing diverse topics across multiple procedures. In addition, multiple research projects using regional data were performed at VQI sites.
- VASCULAR MEDICINE REGISTRY.** In collaboration with the Society for Vascular Medicine, VQI has developed a new registry to evaluate the treatment and outcomes of patients with carotid, AAA and lower extremity arterial disease who are managed medically. This will allow comparison with interventional and surgical treatment registries, and will launch later this year.
- HOSPITAL COST DATA.** A pilot project in collaboration with MedAssets was conducted with 18 VQI hospitals that contributed their charge data for 700 EVAR procedures done in 2014. Charges were converted to costs and matched with VQI data to create homogeneous patient and procedure groups to allow accurate comparison of costs between hospitals. This will assess the usefulness of combining detailed clinical data with hospital billing data to identify opportunities for cost saving in various expense categories.
- ELECTRONIC MEDICAL RECORDS INTEGRATION.** VQI encourages EMR companies to integrate VQI data elements into their products to allow one-time data entry during the process of care and eliminate the need for web-based registry data entry. In addition to its standard data import tools, M2S developed

partial data integration capability with EPIC[®], Medstreaming[®], mTuitive[®], StreamlineMD[®] and SonoSoft[®] this year. This allows hospitals to comply with current Meaningful Use requirements and the planned Advancing Care Information component of the CMS Merit-based Incentive Payment System (MIPS).

- STRATEGIC PLANNING.** SVS PSO leaders developed key goals for this year that include stimulating QI projects, maximizing value for members, strengthening collaboration with external stakeholders, enhancing registry effectiveness, increasing VQI membership, fostering industry relations and increasing operational efficiencies. To oversee these expanding operations, James Wadzinski was recruited into a new position of General Manager. As former Director of Operations at both ACS NSQIP and the American Hospital Association, Jim brings more than 20 years of association management experience to fill this important role.

Number of Participating Centers



Current Quality Initiatives

Quality improvement projects are initiated by Regional Quality Groups or promoted across all regions. Examples include:

- OPTIMIZING DISCHARGE MEDICATIONS.** Research using VQI data showed that patients discharged on aspirin and statins after arterial procedures had significantly improved 5-year survival. VQI adopted this as a national QI project, and provides physicians and centers with regular feedback as well as tools such as guidelines for patient communication to primary care physicians, to increase the number of patients on these medications.
- REDUCING LENGTH OF STAY.** VQI regional benchmark reports showed wide variation in LOS for major vascular procedures. Hospitals in several regional groups identified potential causes and brainstormed solutions including

discharging patients directly from the ICU, adjusting the time of surgery, encouraging earlier patient mobility and providing patients with more information about discharge expectations during pre-surgical visits.

- IMPROVING SMOKING CESSATION.** VQI data show substantial variation across centers in the rate of patient smoking cessation one year after arterial procedures. A project by 8 VQI centers found that effective nicotine replacement and quit-line referral increased significantly at sites instructed in proper technique. A national QI effort with feedback is being launched in this important area.

- IMPROVING APPROPRIATENESS OF CARE.** To benefit from prophylactic procedures, such as treatment of asymptomatic carotid stenosis, patients must have good life expectancy. VQI data have shown that one-year patient survival after CEA for asymptomatic stenosis varies significantly by surgeon, suggesting an opportunity for better patient selection. This year VQI distributed mortality-prediction models available on a smartphone and benchmark reports so that surgeons could evaluate their patient selection. A similar report for VQI centers compared the percentage of patients treated by peripheral intervention who had claudication versus critical limb ischemia, where substantial variation occurs, to provide insight into appropriateness of patient selection.

SVS PSO Organization

The SVS Patient Safety Organization (PSO) depends on 285 physician members who volunteer to support VQI projects. These physicians practice in both hospitals and outpatient facilities and are drawn from the Society for Vascular Surgery (SVS), the American Venous Forum (AVF), the Society for Vascular Medicine (SVM) and 12 other endorsing societies.

SVS PSO COMMITTEES (AND CHAIRS):

Governing Council (Larry Kraiss, MD)
Technology Council (Fred Weaver, MD)
Arterial Quality Council (Adam Beck, MD)
Venous Quality Council (José Almeida, MD)
Research Advisory Committee (Philip Goodney, MD)
Communication Committee (Glenn Jacobowitz, MD)

REGISTRY COMMITTEES (AND CHAIRS):

Open AAA Repair (Rumi Faizer, MD)
Endovascular AAA Repair (Sal Scali, MD)
Thoracic and Complex EVAR (Virenda Patel, MD)
Lower Extremity Amputation (Ahmed Abou-Zamzam, MD)
Carotid Artery Stenting (Grace Wang, MD)
Carotid Endarterectomy (Randall DeMartino, MD)
Peripheral Vascular Intervention (Daniel Bertges, MD)
Hemodialysis Access (Karen Woo, MD)
Infra-inguinal Bypass (Andres Schanzer, MD)
Supra-inguinal Bypass (Andres Schanzer, MD)
IVC Access (Tony Gasparis, MD)
Varicose Vein (Thomas Wakefield, MD)

REGIONAL QUALITY GROUPS (AND LEADERS)

Carolinas Region (Jeb Hallett, MD)
Great Lakes Region (Jean Starr, MD)
Greater New York Region (Apostolos Tassiopoulos, MD)
Michigan Region (Alex Shepard, MD)
Mid-America Region (Joseph Schneider, MD)
Mid-Atlantic Region (Grace Wang, MD)
Mid-South Region (Ed Garrett, MD)
Midwest Region (Gary Lemmon, MD)
New England Region (Phil Goodney, MD)
Northern California Region (Tej Singh, MD)
Pacific Northwest Region (Ben Starnes, MD)
Rocky Mountain Region (Jeffrey Gilbertson, MD)
Southeastern Region (Adam Beck, MD)
Southern California Region (Ahmed Abou-Zamzam, MD)
Southern Region (Dennis Gabel, MD)
Upper Midwest Region (Steven Kappes, MD)
Virginias Region (Gilbert Upchurch, MD)

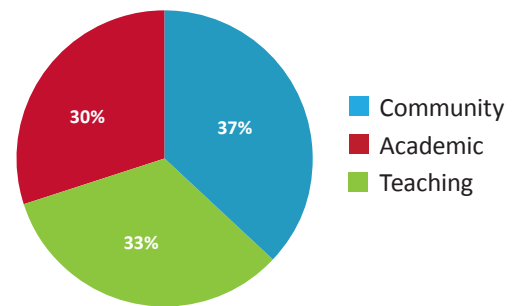
Technology Improvements Through M2S

As the VQI technology partner, M2S has substantially improved the data collection and reporting system since VQI launched in 2011. This spring, M2S was acquired by Medstreaming, a leading provider of healthcare IT solutions for image intensive specialties. This partnership will offer efficiencies in workflow solutions, EMR integration, data analytics and image management. M2S will continue to work as a distinct entity within Medstreaming, and continue to work with the SVS PSO to prioritize new development projects, which this year included:

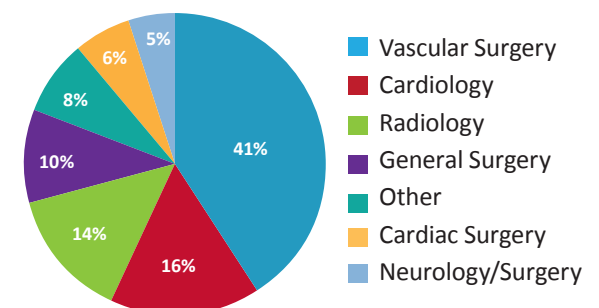
- Physician-level user-customizable reports in the Analytic Engine to benchmark with other physicians
- Addition of 15 quality measures to allow physicians to more easily meet PQRS requirements
- Increased standard reports for multiple registries in the Analytic Engine that can be customized by users
- Ability to define specific patient subgroups and “drill down” to the patient record at each center
- Health-system reporting to provide an overview of multiple hospitals combined in the same system

VQI Member Characteristics

TYPES OF PARTICIPATING FACILITIES



SPECIALTY OF PARTICIPATING PHYSICIANS



VQI Activity With External Stakeholders

MEDICAL DEVICE MANUFACTURER PROJECTS

- **POST-APPROVAL SURVEILLANCE.** The TEVAR Aortic Dissection Device project, which began in October 2014 with Gore and Medtronic, has enrolled its 400 patient cohort much sooner than expected due to the established network of VQI sites. These patients will be followed annually for 5 years to understand device performance in real world practice and meet FDA regulatory requirements. The Lombard Angulated Neck EVAR project, which began in December 2014, now involved 17 sites and includes supplemental core lab imaging through M2S, in order to evaluate details such as endoleak during 5-year follow-up.
- **EXPANSION OF DEVICE INDICATIONS.** Many devices used to treat vascular disease have been adapted to new or expanded indications from those initially approved by the FDA. Data about such “off-label” use are captured in VQI and offer the potential to provide FDA, industry and physicians with important information to better match patients with devices for optimal treatment, and for potential expansion of approved indications for use. VQI, FDA and industry are now engaged in such projects, which can combine both historical and prospective VQI data.
- **OBJECTIVE PERFORMANCE DATA.** New device development and regulatory approval often require comparison with contemporary outcomes of existing techniques and devices. Such data have been collected in the “real world” of VQI across multiple physician specialties and hospital types. However, historical data may not always contain some details of device type or treatment that might be needed for a device evaluation project. This year VQI demonstrated the ability to supplement already-collected procedure and one-year follow-up data with new data added by sites that had performed these procedures. This provided the objective performance data, including already existing one-year follow-up, within 5 months, as opposed to a new prospective project over several years.

The VQI received important financial support from industry to fund new initiatives, such as new registries and reporting functionality. Corporate support totaled \$525,000 this year, provided by these Quality Champions and Partners:

QUALITY CHAMPIONS

QUALITY PARTNERS

FDA—MEDICAL DEVICE EPIDEMIOLOGY NETWORK (MDEPINET) PROJECTS

- **REGISTRY ASSESSMENT OF PERIPHERAL INTERVENTIONAL DEVICES (RAPID).** VQI actively participated in this project to develop a core minimum data set for assessment of devices used to treat peripheral arterial disease. This is a collaboration with multiple specialties, companies and agencies to develop a mechanism for common data extraction from multiple sources for total product life cycle device evaluation.
- **INTERNATIONAL CONSORTIUM OF VASCULAR REGISTRIES (ICVR):** VQI and 11 other national vascular registries from Europe and Australasia combined data to analyze variation in treatment of carotid and aortic aneurysm disease across countries, with an emphasis on open vs. endovascular treatment. This group is planning prospective multi-national device monitoring trials and additional retrospective comparison of treatment outcomes across countries.

NIH SPONSORED PROJECT

- **CREST-2 REGISTRY.** Investigators must report their carotid artery stent procedures to be qualified for this trial and then report non-randomized procedures during the trial. This year more than 90 interventionalist used VQI to report more than 800 CAS procedures for the CREST-2 Registry project.

VQI Timeline Major Milestones

2011

- VQI launched by SVS with 3 components: SVS PSO, Regional Quality Groups, M2S data registry
- 89 VQI centers; 18,388 procedures
- SVS PSO listed by the Agency for Healthcare Research and Quality (AHRQ)
- Built on foundation created by Vascular Study Group of New England
- 7 vascular registries available

2012

- 167 VQI centers; 1,700 physicians, 35,550 procedures reported
- Physician champions identified to lead Regional Quality Groups
- First Center Opportunity Profile Improvement (COPI) report issued
- National and Regional Research Advisory committees established
- 8 new Regional Quality Groups formed

2013

- 253 VQI centers, 2,100 physicians, 109,000 procedures
- 11 vascular registries available, 11 Regional Quality Groups
- National VQI study showed impact of hospital feedback on surgical site infections

2014

- 304 VQI centers, 2,500 physicians, 175,000 procedures reported
- 12 vascular registries available, 16 Regional Quality Groups
- CMS approved VQI via M2S as a Qualified Clinical Data Registry (QCDR) for PQRS reporting
- Two post approval surveillance projects undertaken for industry and the FDA

2015

- 367 VQI centers, 2,800 physicians, 261,605 procedures reported
- First physician-specific benchmark report issued
- COPI reports on reducing SSI rates and reports on reducing LOS for key vascular procedures
- New Varicose Vein Registry developed
- Pilot project launched to merge cost and clinical data for EVAR

2016 YTD

- 377 VQI centers, 2,929 physicians, 292,087 procedures (April)
- Development of a Vascular Medicine Registry and redesign of PVI Registry
- Improved M2S reporting and analytics capabilities
- Inaugural VQI Annual Meeting (VQI@VAM)

375+ Participating VQI Centers and Health Systems by State

- Providence Alaska Medical Center (AK)
 University of Alabama (AL)
 University of Arkansas (AR)
 Carondelet Specialists Group (AZ)
 Mayo Clinic Arizona (AZ)
 The University of Arizona MC—
 University Campus (AZ)
 Cedars-Sinai Medical Center (CA)
 Dignity Health (Sequoia Hospital) (CA)
 El Camino Hospital (CA)
 Hoag Memorial Hospital Presbyterian (CA)
 Loma Linda University Medical Center (CA)
 Marin General Hospital (CA)
 Palo Alto Medical Foundation (CA)
 Providence Holy Cross Medical Center (CA)
 Providence Little Company of Mary,
 Torrance (CA)
 Providence Saint Joseph Medical
 Center (CA)
 Providence Tarzana Medical Center (CA)
 San Fernando Valley Vascular Group (CA)
 Scripps Green Hospital (Scripps Health) (CA)
 Sharp Chula Vista Medical Center (CA)
 Sharp Grossmont Hospital (CA)
 Sharp Memorial Hospital (CA)
 St. John's Hospital Center (Providence) (CA)
 Stanford Hospital & Clinics (CA)
 UC Davis Health System (CA)
 UCLA— Harbor MC, Los Angeles County (CA)
 UCLA— Ronald Reagan Medical Center (CA)
 UCSD Medical Center (CA)
 UCSF Medical Center (CA)
 USC University Hospital—Keck Hospital (CA)
 Washington Hospital Health System (CA)
 St. Michael's (CAN)
 Thunder Bay Reg Health Sciences
 Centre (CAN)
 Toronto General Hospital (CAN)
 Centura—Penrose St. Francis Health
 Services (CO)
 Centura—Porter Adventist Hospital (CO)
 Exempla—Saint Joseph Medical Center (CO)
 Presbyterian St. Luke's Medical Center (CO)
 UCHA— Memorial Hospital Central (CO)
 University of Colorado, Denver (CO)
 Danbury Hospital (CT)
 Hartford Hospital (CT)
 Saint Francis Hospital and Medical
 Center (CT)
 Yale—New Haven Hospital (CT)
 MedStar—Washington Hospital Center (DC)
 MFA—Med Faculty Assoc Physician
 Group (DC)
 Beebe Healthcare (DE)
 Christiana Care Health System (DE)
 Baptist Hospital of Miami (FL)
 BayCare—St. Anthony's Hospital (FL)
 Coastal Vascular & Interventional, PLLC (FL)
 Florida Hospital—Orlando (FL)
 Mayo Clinic Florida (FL)
 Memorial Hospital Pembroke (FL)
 Memorial Hospital West (FL)
 Memorial Regional Hospital (FL)
 Miami Vein Center (FL)
 North Florida Regional Medical Center (FL)
 Orlando Health—Dr. P. Phillips Hospital (FL)
 Orlando Health—Orlando Regional MC (FL)
 Orlando Health—South Seminole
 Hospital (FL)
 Palm Beach Gardens MC
 (Cleveland Clinic) (FL)
 Sarasota Memorial Hospital (FL)
 South Miami Hospital (FL)
 Tallahassee Memorial Hospital (FL)
 Tampa Cardiovascular Associates (FL)
 Tampa General Hospital (FL)
 The Vein and Vascular Institute
 of Tampa Bay (FL)
 UF Health—Shands Hospital (FL)
 Vascular Surgery Associates (FL)
 Albany Vascular Specialist Center (GA)
 Athens Regional Medical Center (GA)
 Emory Healthcare (GA)
 Floyd Medical Center (GA)
 Grady Memorial Hospital (GA)
 Memorial University Health MC—SHVI (GA)
 Northside Hospital Atlanta (GA)
 Northside Hospital Cherokee (GA)
 Northside Hospital Forsyth (GA)
 Piedmont Hospital Atlanta (GA)
 Redmond Regional Medical Center (GA)
 Tift Regional Medical Center (GA)
 Cardiovascular Medicine PC (IA)
 Iowa Heart Center at Mercy Medical
 Center (IA)
 UnityPoint Health—Des Moines (IA)
 St. Luke's Healthcare—St. Luke's
 Regional MC (ID)
 Cardiovascular Medicine PC (IL)
 Carle Foundation Hospital (IL)
 NorthShore Univ Health—NorthShore
 Skokie Hospital (IL)
 Northwestern MC DuPage Hospital (IL)
 Northwestern Memorial Hospital (IL)
 OSF—Saint Anthony Medical Center (IL)
 OSF—Saint Francis Medical Center (IL)
 OSF—St. Joseph Medical Center (IL)
 SIU School of Medicine, Memorial MC (IL)
 St. Mary's Hospital—Decatur (IL)
 UnityPoint Health—Methodist (IL)
 University of Chicago Medical Center (IL)
 Weiss Memorial Hospital (IL)
 Beacon Health Clinic (IN)
 Community Hospital East (IN)
 Community Hospital Heart & Vascular (IN)
 Community Hospital South (IN)
 IU Health—Arnett Hospital (IN)
 IU Health—Ball Memorial Hospital (IN)
 IU Health—Bloomington Hospital (IN)
 IU Health—Goshen Hospital (IN)
 IU Health—Methodist Hospital (IN)
 IU Health—Saxony Hospital (IN)
 Memorial Hospital of South Bend (IN)
 Saint Joseph Regional Medical Center (IN)
 St. Francis Heart Center (IN)
 St. Vincent Heart Center of Indiana, LLC (IN)
 St. Vincent Hospital & Healthcare Center (IN)
 University of Kansas Medical Center (KA)
 Baptist Health Madisonville—
 Jack L. Hamman Heart & Vascular
 Center (KY)
 KentuckyOne Health—Jewish East (KY)
 KentuckyOne Health—Jewish Hospital (KY)
 King's Daughters Medical Center (KY)
 Baton Rouge General Medical Center (LA)
 LSU Health Science Center—Shreveport (LA)
 Ochsner Medical Center (LA)
 Our Lady of the Lake (LA)
 Baystate Medical Center (MA)
 Berkshire Medical Center (MA)
 Beth Israel Deaconess Medical Center (MA)
 Boston Medical Center (MA)
 Brigham and Women's Hospital (MA)
 Hoenig Vascular Center (MA)
 Massachusetts General Hospital (MA)
 Southcoast—Charlton Memorial Hospital (MA)
 Southcoast—St. Luke's Hospital (MA)
 St. Elizabeth's Medical Center (MA)
 Tufts Medical Center (MA)
 University of Massachusetts Memorial
 Hospital (MA)
 Vascular Care of Metrowest, P.C. (MA)
 Horizon Vascular Specialists (MD)
 Johns Hopkins Bayview Medical
 Center (MD)
 Maryland Vascular Specialist (MD)
 Mercy Medical Center—Baltimore (MD)
 The Johns Hopkins Hospital (MD)
 University of Maryland Medical Center (MD)
 Central Maine Medical Center (ME)
 Eastern Maine Medical Center (ME)
 Maine Medical Center (ME)
 MaineGeneral Medical Center (ME)
 Mercy Hospital (ME)
 Beaumont Grosse Pointe Hospital (MI)
 Beaumont Royal Oak Hospital (MI)
 Beaumont Troy Hospital (MI)
 Borgess Hospital (MI)
 DMC Harper University Hospital (MI)
 Henry Ford Hospital (MI)
 Henry Ford Hospital West Bloomfield (MI)
 McLaren Clemens Reg MC d/b/a
 McLaren Macomb (MI)
 McLaren Regional Medical Center
 d/b/a Flint (MI)
 Michigan Vascular Center (MI)
 Spectrum Health Hospital (MI)
 University of Michigan (MI)
 Vascular Center of Northern Michigan (MI)
 Allina—Abbott Northwestern Hospital (MN)
 Allina—Mercy Hospital (MN)
 Allina—United Hospital (MN)
 Allina—Unity Hospital (MN)
 Fairview—Southdale Hospital (MN)
 Fairview—University of Minnesota MC (MN)
 Mayo Clinic (MN)
 St. Luke's Hospital (MN)
 Columbia Surgical Services, Inc. (MO)
 Mercy Hospital Springfield (MO)
 Mercy Hospital St. Louis (MO)
 SSM DePaul Health Center (MO)
 SSM St. Clare Health Center (MO)
 SSM St. Joseph Health Center (MO)
 SSM St. Mary's Health Center (MO)
 St. Anthony's Medical Center (MO)
 St. Luke's Hospital (MO)
 University of Missouri Medical Center (MO)
 Anderson Regional Medical Center (MS)
 The Practice of John F Lucas III, M.D. (MS)
 University of Mississippi Medical Center (MS)
 St. Patrick Hospital (Providence) (MT)
 St. Vincent Healthcare (MT)
 Alamance Regional Medical Center (NC)
 Carolinas Healthcare—Pineville (NC)
 Carolinas Healthcare System—Sanger Heart
 & Vascular Institute (NC)
 Cone Health Heart & Vascular Center (NC)
 Duke University Medical Center (NC)
 Mission Hospital (NC)
 Novant Health Forsyth Medical Center (NC)
 Novant Health Matthews Medical Center (NC)
 Novant Health Presbyterian Medical
 Center (NC)
 Rex Healthcare (UNC Health System) (NC)
 University of North Carolina Hospitals (NC)
 Vidant Medical Center (NC)
 Wake Forest Baptist Health (NC)
 CHI Health Nebraska Heart (NE)
 Catholic Medical Center d/b/a CTSA (NH)
 Concord Hospital (NH)
 Dartmouth Hitchcock Medical Center (NH)
 Elliot Hospital (NH)
 Lakes Region General Hospital (NH)
 Cooper University Medical Center (NJ)
 Kennedy University Hospital (NJ)
 Meridian—Bayshore Community Hospital (NJ)
 Meridian—Jersey Shore University MC (NJ)
 Meridian—Ocean Medical Center (NJ)
 Meridian—Riverview Medical Center (NJ)
 Meridian—Southern Ocean Medical
 Center (NJ)
 Monmouth MC (Barnabas Health) (NJ)
 Newark Beth Israel MC (Barnabas
 Health) (NJ)
 Overlook Hospital (Atlantic Health System) (NJ)
 Saint Barnabas MC (Barnabas Health) (NJ)
 Heart Hosp. of New Mexico at Lovelace
 MC (NM)
 Presbyterian Hospital (NM)
 Regents of the University of New Mexico (NM)
 Carson Tahoe Regional Hospital (NV)
 Catholic Health Mercy Hospital of Buffalo (NY)
 Catholic Health Sister of Charity Hospital (NY)
 Columbia University Medical Center (NY)
 Kaleida—Buffalo General Hospital (NY)
 Maimonides Medical Center (NY)
 Montefiore Medical Center (NY)
 Mount Sinai—Beth Israel Hospital (NY)
 Mount Sinai Hospital (NY)
 Mount Sinai—St. Luke's Roosevelt Hospital
 Center (NY)
 NSLJ—Lenox Hill Hospital (NY)
 NSLJ—Long Island Jewish Medical
 Center (NY)
 NSLJ—North Shore University Hospital (NY)
 NSLJ—Staten Island Hospital—
 North Site (NY)
 NYP/Weill Cornell Medical College (NY)
 NYU Langone Medical Center (NY)
 Stony Brook University Medical Center (NY)
 Strong Meml Hosp, Univ of Rochester MC (NY)
 SUNY Upstate—University Hospital MC (NY)
 Westchester Medical Center (NY)
 Winthrop University Hospital (NY)
 Aultman Hospital (OH)
 Cleveland Clinic, Heart and Vascular
 Insitute (OH)
 Mercy Medical Center (OH) (OH)
 Mount Carmel St Ann's Hosp (OH)
 Mount Carmel East Hospital (OH)
 Mount Carmel West Hospital (OH)
 OhioHealth Doctors Hospital (OH)
 OhioHealth Dublin Methodist Hospital (OH)
 OhioHealth Grady Memorial Hospital (OH)
 OhioHealth Grant Medical Center (OH)
 OhioHealth Marion General Hospital (OH)
 OhioHealth Riverside Methodist Hospital (OH)
 ProMedica Toledo Hospital, Jobst
 Vascular (OH)
 Summa Health System (OH)
 The MetroHealth System (OH)
 The Ohio State University, Wexner MC (OH)
 University Hospitals Health System (OH)
 University of Toledo Medical Center (OH)
 Wright State Physician Group (OH)
 Inovia Vein Specialty Center (OR)
 Oregon Health & Sciences University (OR)
 Providence Medford Medical Center (OR)
 Providence Portland Medical Center (OR)
 Providence St. Vincent Medical Center (OR)
 Abington Memorial Hospital (PA)
 DLP Conemaugh Memorial Medical
 Center (PA)
 Geisinger Community Medical Center (PA)
 Geisinger Medical Center (PA)
 Geisinger Wyoming Valley Medical Center (PA)
 Guthrie Clinic (PA)
 Penn State Milton S. Hershey Medical
 Center (PA)
 St. Luke's Hospital & Health Network (PA)
 The Reading Hospital and Medical
 Center (PA)
 UPENN— University of Pennsylvania (PA)
 UPMC/UPP Vascular Surgery (PA)
 UPMC/Hamot Hospital (PA)
 West Penn—Allegheny General Hospital (PA)
 West Penn—Allegheny Valley Hospital—
 Kiskadee MC (PA)
 West Penn—Forbes Regional Hospital (PA)
 West Penn Hospital (PA)
 West Penn—Jefferson Hospital (PA)
 Lifespan—Rhode Island Hospital (RI)
 Lifespan—The Miriam Hospital (RI)
 Beaufort Memorial Hospital (SC)
 McLeod Regional Medical Center (SC)
 Medical University of South Carolina
 Hospital (SC)
 Palmetto Health Richland (SC)
 Regional MC of Orangeburg &
 Calhoun Co (SC)
 Roper St. Francis Hospital (SC)
 Self Regional Healthcare (SC)
 Spartanburg Regl Health Services
 District, Inc. (SC)
 Trident Medical Center (SC)
 Rapid City Regional Hospital (SD)
 Sanford Clinic Vascular Associates (SD)
 Baptist Memorial Hospital— Memphis (TN)
 Dr E Gardner MD PC (TN)
 Jackson Madison County General
 Hospital (TN)
 Nashville Vascular & Vein Institute (TN)
 Premier Surgical Associates, PLLC (TN)
 Saint Thomas Midtown Hospital (TN)
 Saint Thomas Rutherford Hospital (TN)
 Saint Thomas West Hospital (TN)
 University of Tennessee Medical Center (TN)
 Baylor All Saints Medical Center (TX)
 Baylor—Jack and Jane Hamilton Heart
 and Vascular Hospital (TX)
 Baylor—The Heart Hospital Denton (TX)
 Baylor—The Heart Hospital Plano (TX)
 Baylor University Medical Center (TX)
 CTVS—CardioThoracic Vascular
 Surgeons (TX)
 Houston Methodist St. John Hospital—
 Clear Lake (TX)
 John Sealy Hospital, UTMB (TX)
 Medical Centre Hospital (TX)
 Mem Hermann Heart & Vascular Inst.—
 Texas MC (TX)
 Memorial Hermann Southwest Hospital (TX)
 Peripheral Vascular Associates (TX)
 Scott & White Memorial Hospital (TX)
 Texas Health Presbyterian Hospital
 Dallas (TX)
 University of Texas Health Science Center,
 San Antonio (TX)
 University of Texas MD Anderson Center (TX)
 University of Utah Hospital and Clinics (UT)
 Augusta Health (VA)
 Carilion Roanoke Memorial Hospital (VA)
 Centra Health (Lynchburg General
 Hospital) (VA)
 Charlottesville Radiology LTD & CRL
 Surgical (VA)
 CJW Medical—Chippenham Hospital (VA)
 CJW Medical—Johnston-Willis Hospital (VA)
 Inova Alexandria Hospital (VA)
 Inova Fair Oaks Hospital (VA)
 Inova Fairfax Hospital (VA)
 Inova Gainesville Hospital (VA)
 Inova Loudoun Hospital (VA)
 Inova Mount Vernon Hospital (VA)
 Mary Washington Hospital (VA)
 Sentara Careplex Hospital (VA)
 Sentara Leigh Hospital (VA)
 Sentara Norfolk General Hospital (VA)
 Sentara Northern Virginia (VA)
 Sentara Obici Hospital (VA)
 Sentara Princess Anne Hospital (VA)
 Sentara RMH Medical Center (VA)
 Sentara Virginia Beach General Hospital (VA)
 Sentara Williamsburg Regional MC (VA)
 UVA Medical Center (UVA Health System) (VA)
 Virginia Commonwealth University Hospital
 Authority (VA)
 Winchester Medical Center (VA)
 Fletcher Allen HealthCare (VT)
 Harborview Medical Center (WA)
 Kadlec (Providence) (WA)
 Northwest Hospital & Medical Center (WA)
 Providence Holy Family Hospital (WA)
 Providence Regional Medical Center (WA)
 Providence Sacred Heart Medical
 Center (WA)
 Providence St. Mary Medical Center (WA)
 Providence St. Peter Hospital (WA)
 Swedish Cherry Hill (Providence) (WA)
 Swedish Edmonds (Providence) (WA)
 Swedish First Hill (Providence) (WA)
 University of Washington Medical
 Center (WA)
 Virginia Mason (WA)
 Aurora Baycare Medical Center (WI)
 Aurora Lakeland Medical Center (WI)
 Aurora Medical Center in Kenosha (WI)
 Aurora Medical Center in Manitowoc
 County (WI)
 Aurora Medical Center in Oshkosh (WI)
 Aurora Medical Center in Summit (WI)
 Aurora Medical Center in Washington
 County (WI)
 Aurora Medical Center of Grafton (WI)
 Aurora Memorial Hospital of 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 Hospital Center (WI)
 Columbia St. Mary—Milwaukee (WI)
 Columbia St. Mary—Ozaukee (WI)
 Froedtert Memorial Lutheran Hospital (WI)
 ProHealth Care (Waukesha Mem
 Hospital) (WI)
 Camden Clark Medical Center (WV)
 Charleston Area Medical Center (WV)
 St. Mary's Medical Center (WV)