The Evolution of Quality Improvement in Vascular Surgery

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(Note: An abbreviated version of this ran in the October issue of Vascular Specialist.)

Participation in quality improvement registries (QIRs) has evolved to be a fundamental component of vascular surgical practice. QIRs play roles of varied importance in credentialing of individual surgeons, accreditation of programs and institutions, and reimbursement. Participation, however, is not without its challenges. It can be costly, time-consuming and, depending on how the data is used, may be less productive in improving quality than hoped. However, when implemented properly, the value of participation in QIRs is indisputable for individual vascular surgeons, their hospitals and most importantly, their patients.

Outcome assessment first became important in the 1980s due to widely varying results achieved with the two most commonly performed cardiac and vascular operations: carotid endarterectomy and coronary artery bypass (CABG). In the case of CABG, public reporting of outcomes, legislated in states led by New York, focused public scrutiny and demanded attention to quality measures.

Cardiac surgery pioneered outcome assessment as a driver for performance improvement of individual surgeons and hospitals. Measurement of vascular surgery outcomes, first stimulated by critics of widely disparate rates of stroke and death associated with carotid endarterectomy, was deemed to be critically important by leaders of the Society for Vascular Surgery (SVS). In his SVS Presidential Address in 1994, Norman Hertzer, MD, argued that “results mean everything.” Shortly thereafter, working with Medicare Quality Improvement organizations in 10 states, Timothy Kresowik, MD, and colleagues demonstrated that benchmarking with regards to the use of process measures could result in improved overall outcomes for carotid endarterectomy. This was an important step for vascular surgery. As opposed to simple tabulation of volume and outcome, Kresowik et al helped change the focus to education and compliance with process measures shown to improve outcomes.

The Vascular Study Group of Northern New England (VSGNNE), the precursor to what is now the Vascular Quality Initiative, was formed in 2001, inspired by the Northern New England Cardiovascular Disease Study Group. Eighteen years and hundreds of publications later, quality improvement through benchmarking and shared best-practices is a fundamental component of vascular surgical practice for those individuals and institutions who are part of the VQI. The initiative now includes 12 registries tracking more than 10 index procedures across the spectrum of vascular care in more than 600 community, tertiary and academic hospitals.
This quality movement has not been specific to vascular surgery; it has affected all medical specialties. In 2017, the Medicare Access and CHIP (Children's Health Insurance Program) Reauthorization Act (MACRA) established the Quality Payment Program (QPP). The QPP aims to shift Medicare from a fee-for-service to a “pay-for-performance” model. The QPP directly ties quality to reimbursement by requiring Medicare providers to participate in a Merit-based Incentive Payment Systems (MIPS) or Advanced Alternative Payment Models (APMs).

CMS estimates that between 95 and 98 percent of MIPS-eligible physicians participated in the QPP in 2017 and 2018. Satisfying participation requirements was initially very easy for several reasons. In the first two years of the QPP, MIPS participants could choose to report partial data and participate in process measures to satisfy the quality reporting requirement. For example, documentation of statin and antiplatelet medications for patients with peripheral arterial disease satisfied the requirement for participation in process measures. The program has evolved towards required reporting of 12-month data with a focus on outcome measures rather than process measures.

Developing separately but in parallel with the changes occurring in the QPP is an SVS initiative targeted to the verification and improvement of vascular centers. This was proposed at the 2017 Vascular Annual Meeting (VAM) in San Diego and refined over following two years. Anton Sidawy, MD, provided an update on the program during the 2019 VAM. Through collaboration with the American College of Surgeons and with input from other key medical specialty societies, the SVS plans to launch its Vascular Center Verification and Quality Improvement Program (VCVQ &I). In a recent interview, Dr. Sidawy noted that “movement away from volume towards value is irreversible.” He added that it is incumbent on SVS to “proactively support this movement. Vascular surgeons must participate and lead as quality vascular care is defined, or others will define it for us.”

The VCVQ & I process has developed four key components:

1. Compliance with standards for vascular care
2. Infrastructure necessary to support the standards
3. Use of an externally validated quality database registry -- documenting compliance with quality-vetted processes -- and documenting short-term and one-year outcomes
4. Site visitor for third-party assessment

Kenneth M. Slaw, PhD, SVS executive director, noted that the SVS will be fully and completely committed to supporting members navigating their way through the verification process. He, too, emphasized the importance of examining risk-adjusted, benchmarked patient outcomes.

Participation in QIRs is thus fundamentally important for achieving the highest quality performance scores with MIPS or APMs as well as successful achievement of vascular center certification. In the October and November issues of “Under the MACRAscope” in the Journal of Vascular Surgery, we have highlighted three databases: Vascular Quality Initiative, the National Surgical Quality Improvement Project (NSQIP) of the American College of Surgeons and the National Cardiac Data Registry (NCDR) of the American College of Cardiology. These databases are summarized in a table, the link to which is below. Since measurement of outcomes at least one year post-operatively is gaining critical importance, the VQI seems to best match a practice, hospital or healthcare system’s database needs.

In recent years, there has been a promulgation of databases from industry and professional societies to track volume, process and at least short-term outcomes to meet regulatory and third-party demands. Costs of starting and maintaining these database, including staff, physician and institutional man hours, has exceeded billions of dollars. Moreover, there is concern that this process, especially when data-entry and maintenance are added to other daily practice burdens, is contributing to potential limitations in access to care (“cherry-picking” low-risk cases) and physician early retirement and burnout.

Institutions and healthcare systems indeed are overwhelmed by the demands of multiple registry databases. Piedmont Heart Institute of the Piedmont Healthcare System in Georgia participates in 12 databases, seven of which are required for certification or accreditation of specific programs. When these databases are added to similar programs required for transplantation, oncology and others, the expenditure in manpower and cost is a major line item for each annual budget. Leigh Hamby MD, a general surgeon and chief medical officer for Piedmont Healthcare, notes that the system
receives requests for support for participation in multiple quality databases every year, but "our current strategy for programmatic participation in databases is to ensure that the requesting parties account for the total cost of their database participation in their business plans, including a commitment to specific targeted improvements. Those business plans are then reviewed along with all of the other strategic program requests by system leadership."

Vascular surgeons working within major healthcare systems and large hospitals must therefore compete for resources to support QIR participation. The QI Poster Competition winner at this year’s VQI meeting came from Rosha Nodine and colleagues of Baylor Scott & White, The Heart Hospital. She conducted a national survey of VQI data managers and showed that VQI participation in six modules, for a hospital with moderate vascular case volume, would require 0.94 full-time equivalent employees. Higher case volume and/or participation in more modules would require even more employees. The laudable goal of VCVQ & I may be the leverage needed for vascular surgeons to gain hospital resources to support greater QIR participation. One may also ponder if a program such as the VCVQ & I may begin a dialogue across registries, eventually leading to more collaboration and perhaps even integration. This would benefit all.

The SVS, through the work of its Quality and Performance Measures Committee and development of the VCVQ & I, is proactively responding to the need for vascular surgical leadership as quality and value for vascular care are continuously refined. Participation in quality improvement registries is key to both. We challenge vascular surgeons in all practice settings to participate in quality improvement as a successful vascular practice may soon demand nothing less.

References

4. 2020 Quality Payment Program Fact Sheet, CMS
5. Ross interview with Dr. Sidawy July 25, 2019
6. Ross interview with Ken Slaw 7/18/2019