

PRACTICE MANAGEMENT

Roles for specialty societies and vascular surgeons in accountable care organizations

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With the passage of the Affordable Care Act, accountable care organizations (ACOs) represent a new paradigm in healthcare payment reform. Designed to limit growth in spending while preserving quality, these organizations aim to incant physicians to lower costs by returning a portion of the savings realized by cost-effective, evidence-based care back to the ACO. In this review, first, we will explore the development of ACOs within the context of prior attempts to control Medicare spending, such as the sustainable growth rate and managed care organizations. Second, we describe the evolution of ACOs, the demonstration projects that established their feasibility, and their current organizational structure. Third, because quality metrics are central to the use and implementation of ACOs, we describe current efforts to design, collect, and interpret quality metrics in vascular surgery. And fourth, because a “seat at the table” will be an important key to success for vascular surgeons in these efforts, we discuss how vascular surgeons can participate and lead efforts within ACOs. (*J Vasc Surg* 2012;55:875-82.)

With the passage of the Affordable Care Act in 2010,¹ a new payment model was created for Medicare patients who receive their healthcare within large health systems. Most patients undergoing major vascular surgery in the United States are over age 65, and accordingly, the majority of these patients receive Medicare benefits. Therefore, these changes in the manner by which Medicare payments are determined will affect a significant portion of the patients cared for by vascular surgeons, a population whose vascular care is estimated to cost \$5 billion dollars annually.²

According to the Center for Medicare and Medicaid Services, the main goal of the Affordable Care Act is to improve health care quality and slow spending growth in Medicare.¹ However, many remain concerned about how, why, and where accountable care organizations (ACOs) will change the manner in which vascular health care is provided. In this review, we summarize the development of ACOs, explore the roles of subspecialty societies and data registries within ACOs, and examine opportunities for vas-

cular surgeons to participate and lead in improving the health of populations of vascular patients.

CONTROLLING MEDICARE SPENDING IN RECENT YEARS: THE SUSTAINABLE GROWTH RATE, MANAGED CARE, AND THE EVOLUTION OF ACOs

The Affordable Care Act was passed by Congress on September 17, 2010³ and signed by President Obama on December 14, 2010.⁴ A key element of this legislation was a provision that encouraged the development of a new patient care model, the accountable care organization. This term was introduced by Fisher and others in 2006,⁵ in response to ongoing attempts by Congress to limit Medicare spending, given the commonly held belief that current trends in Medicare spending are unsustainable.⁶

In the 1990s, the main tool used to limit spending was the sustainable growth rate (SGR) program.^{7,8} Many surgeons will recognize the term “sustainable growth rate (SGR),” an acronym commonly mentioned in the lay press and popular media during heavily publicized debates in Congress⁹ regarding physician payments for services to Medicare payments. The SGR was originally created and implemented in 1997 as a mechanism to report and limit spending growth on physician services. But calculating the formula and enacting legislation for fee reduction were designed as two different actions, and Congress has found it difficult to execute the latter goal. In response to political pressure, Congress began to pass cost reductions on to future years. Importantly, when failing to deal with an increase in Medicare spending in any one year, the “burden” of decision making (and the excess costs) are passed on to the next year. These effects become cumulative over

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Dr Goodney was supported by a K08 Award (1K08HL05676-01) from the NHLBI, and a AVA/ACS Supplemental Award.

Competition of interest: none.

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The editors and reviewers of this article have no relevant financial relationships to disclose per the JVS policy that requires reviewers to decline review of any manuscript for which they may have a competition of interest.

0741-5214/\$36.00

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doi:10.1016/j.jvs.2011.10.116

Table I. Criteria for designation as an accountable care organization (ACO)

<i>Criteria for designation as an ACO</i>
Express willingness to be accountable for quality, cost, and overall care of Medicare fee-for-service beneficiaries for a minimum of 3 years
Have a formal legal structure to receive and distribute shared savings
Have at least 5000 assigned beneficiaries with a sufficient number of primary care ACO professionals
Report on quality, cost, and care coordination measures, and meet patient-centeredness criteria set forth by the HHS Secretary
May initially focus on one-sided shared savings models

time, such that in recent years, a cumulative payment reduction of over 20% would be necessary to deal with several years of deferrals.^{10,11}

The political evolution of ACOs began in the 1990s, not only due to the lack of efficacy of the SGR in limiting growth but also because managed care organizations also encountered difficulty in achieving cost savings.⁷ While the reasons underlying the failure of managed care in the 1990s are debated, many believe that these organizations failed because they relied on two flawed strategies to limit expenditures.¹² First, at the patient level, payers attempted to limit access to services. Copays, complex referral requirements, and preauthorizations were all used by insurers to make access to care (especially expensive specialty care) difficult. Second, at the provider level, payers attempted to negotiate lower payments with individual providers and introduced risk-sharing models such as capitation. While these arrangements encouraged providers to remain “accountable” for the care provided to patients, quality of care was not considered in the relationship between patient care and provider.

Why did these strategies fail? First, as payers attempted to put these plans into everyday use, patients were generally unwilling to accept purely capitated payment models, primarily because of questions regarding the underlying physician motivation in making treatment decisions (“why doesn’t my doctor want to fix my aneurysm?”).¹³ Additionally, providers felt they were unable to lower costs without being perceived by patients as “rationing care.”¹⁴ Debate ensued in attempts to find a way to reduce cost,¹⁵ and ACOs emerged as the next possible solution.

Seeking to learn from this experience, policymakers developed a new concept of shared risk (and responsibility) for this care between insurers and providers. “Shared risk,” wherein the provider and insurer share the financial responsibility surrounding care, is a central tenet in the concept of ACOs. In this concept, performance measurement and quality markers are used to reward physicians and hospitals that provide cost-effective, evidence-based care.⁵ Policymakers argue that key differences exist between ACOs in today’s healthcare environment and managed care plans of the past. By limiting spending, ACO participants who achieve cost savings retain a portion of the proceeds saved. But unlike traditional managed care plans, quality measures exist to align patient and provider interests and incentives.

EARLY EXPERIENCE IN ACOs: THE PHYSICIAN GROUP PRACTICE DEMONSTRATION PROJECT AND THE ADVOCATE PHYSICIAN PARTNERS

Once the conceptual model of quality at lower cost and provider accountability was established, policymakers began outlining the criteria that would define ACOs. Broadly, as outlined in the Medicare shared savings program,³ ACOs are groups of physicians, hospitals, or care systems established within Medicare, that “take responsibility for the cost and quality of care received by patients, and these organizations will receive a share of the savings they achieve for Medicare.”¹⁶ Medicare will include organizations that meet several key criteria (shown in Table I) in this program, which begins January 1, 2012. CMS has dedicated \$10 billion toward this effort from FY2011 through FY2019, demonstrating a long-term commitment to the implementation, study, and refinement of this new method of healthcare payment management.¹⁷

By intent, the ACO criteria shown in Table I are flexible, to allow conformability to local markets. However, large, established multispecialty care systems that directly employ physicians within a group practice model and already had an administrative infrastructure capable of quality measurement were ideal settings in which to pilot this model of healthcare. Two widely studied, large experimental efforts have been performed in these settings, and early results have been promising (Table II).

First, a CMS-sponsored demonstration project, entitled the Physician Group Practice Demonstration (PGP), studied 10 large, distinct multispecialty groups between April 2005 and December 2009.^{18,19} These groups varied in size from small group practices to large multispecialty clinics, ranging from 232 to 1291 physicians and were broadly distributed across different regions of the United States. In each site, an ACO was established, quality measures were defined, and projected spending targets were set based on prior years’ expenditures.

After 5 years in this project, all 10 PGP sites were able to meet the majority (29 of the 32) of the quality goals outlined in the project’s quality guidelines. Five of the PGPs generated a combined Medicare savings of \$38.7 million (compared with their projected Medicare spending during the same time period). These savings were achieved by “increasing organizational efficiency, care management programs (such as remote-based monitoring for chronic

Table II. Summary of physician group practice plan and advocate physician partners

<i>Project/site</i>	<i>Number of hospitals</i>	<i>Number of physicians</i>	<i>Number of patients</i>	<i>Primary payer</i>	<i>Examples of quality markers</i>	<i>Savings returned to ACO providers</i>
Physician Group project	10 large group practices	5000 physicians, ranging from 232-1291 per practice	223,204	Center for Medicare services	<ul style="list-style-type: none"> ● Beta blocker therapy for post-MI patients ● Documented hypertension ● Plan of care 	\$31.7 million distributed back to five sites that met quality goals
Advocate physician partners	10 affiliated group and private practices	3500 physicians; 2700 in group practice, 900 in solo/independent practice	~1,000,000	Blue Cross/Blue Shield	<ul style="list-style-type: none"> ● eICU capability for all ICU beds ● Specified plan of blood sugar, cholesterol, blood pressure control 	\$38 million in incentive payments distributed to 3700 physicians across 10 sites

ACO, Accountable care organization.

diseases such as congestive heart failure, diabetes, and hypertension), and education and feedback to providers regarding populations of patients with given conditions.”¹⁸⁻²⁰ While a more precise cost accounting will likely be necessary for surgeons to “buy into” this concept, this demonstration project represents a starting point for these organizations to use in their efforts to curtail spending. A second example of how the ACO model can be utilized has been demonstrated by the Advocate Physician Partners in Illinois.²¹ This partnership established an ACO contract with the largest insurer in the region, Blue Cross/Blue Shield. Across 3500 physicians in a large multispecialty practice, the Advocate Physician Partners modified and reinforced an existing complex organizational structure “to improve care, cut costs, and be held accountable for the results.” They cited changes in electronic medical records and information technology, as well as physician leadership in governance activities as central in generating cost savings. Further, they used a deliberate effort in continuously selecting, removing, or modifying the 116 performance measures designed to ensure quality in their organization.

In both of these efforts, obtaining positive results required large structural planning efforts and considerable incentives toward organizational formation, extending well beyond the typical Medicare fee-for-service model. Leaders in ACO formation described three key elements as critical to successful implementation. First, an advanced infrastructure, such as electronic medical records and an extensive administrative structure with defined quality measures, was used to drive physician and hospital performance. Second, physicians and hospitals demonstrated sustained commitment to improving performance. And third, regulatory agencies and organizational administration allowed mechanisms within ACOs to allow provision of health care, as well as provide the means necessary to measure and improve health care delivery.

CURRENT STATUS OF ACO STRUCTURE AND ORGANIZATION

In the standard fee-for-service Medicare payment model, CMS assumes the “financial risk” of health care delivery, and health care expenditures have risen steadily across Medicare for several decades.^{22,23} Providers and hospitals have few incentives to limit spending, and prior attempts to align payment with quality have been difficult to design and implement.²⁴ Therefore, ACOs were designed to limit the financial exposure of the insurer, and incant the provider to meet quality goals and limit spending, and achieve their quality targets.

How will this be carried out in the real world? In the simplest models, initially piloted by CMS, current per capita spending in recent years for a given population within an ACO will be calculated utilizing existing Medicare claims data.⁵ Then, a future spending target will be negotiated between the payer for the ACO structure and the group of providers. These providers will then be “accountable” for meeting spending targets, as well as satisfying predefined quality metrics. After the conclusion of the year, if actual spending is lower than target spending, and quality metrics have been achieved, then the “shared savings” are divided between CMS and the ACO. If actual spending exceeds target spending, providers are not held liable for these additional expenditures, but they also do not receive bonus payments like those derived from “shared savings.”

There are several paradigms, each along a continuum of risk, that detail potential ways in which the ACOs will manage risk (ie, who is responsible for cost overruns and who is rewarded with cost savings) (Table III). The “shared savings” example provides the simplest example, at the lowest “risk” end of the spectrum. In the “shared savings” plan, the provider assumes minimal risk, and existing hospital-based quality measures are used to measure deliv-

Table III. Payment models in accountable care organizations (ACOs)

<i>Type of ACO structure</i>	<i>Complexity</i>	<i>Required infrastructure</i>	<i>IF: quality targets are achieved actual spending <projected spending</i>	<i>Risk burden</i>
Simple shared savings	Simplest	Limited	Provider receives bonus	Risks reside primarily with payer
Symmetric	Moderate	Complex regional cost tracking CATA required	Provider receives bonus if savings occur. However, provider liable for spending that exceeds projections	Shared risk between payer and providers.
Partial capitation	Complex	Cost tracking data required, upfront payment per plan participants	Share of saving Distributed back to providers. Larger potential to recover savings, but also greater risk if overspending occurs	Shared risk, early payment offers support for innovation

ery of care, allowing simplicity in measurement. First, predicted spending goals are established based on past performance. Moving forward, if providers meet quality goals and spend less than predicted, these “shared savings” are returned to the providers. This system requires little upfront capital or structural investment, complex organizational support is not necessary, and quality measures can be simple and hospital based (such as the rate of preoperative antibiotic administration). Most importantly, these initial arrangements represent a single-sided approach to risk—while providers are rewarded if savings are achieved, no provider penalty is incurred if the cost of caring for the cohort exceeds the target spending limit.

At the other end of this continuum, in terms of risk management, are scenarios such as symmetric or partial capitation payment models. These models expose the ACO group to financial risk if spending goals are not achieved but also allow the ACO to retain a greater share of savings if goals are achieved.⁵ For example, in capitation-payment models, the ACO provides advanced payment to the health care system, and therefore the risk burden for the provision of health care delivery rests with the organization. In this model, reminiscent of capitation efforts piloted in the 1990s,²⁵ more risk will be leveraged by the providers in the ACOs, but they will also stand to gain a larger portion of potential shared savings.²⁶

Critics and proponents of the ACO concept agree that several important pieces of this puzzle still have yet to be defined.²⁷ Other than the demonstration projects described above, little evidence exists as to how the administrative elements of ACOs will be structured or created. It also remains unclear how organizations will support the significant upfront expenditures necessary to build the organizational, IT, and quality improvement infrastructure needed to create an ACO. This sizeable investment will likely limit ACO creation to large care systems where many of these elements are already in existence, at least in the near future.

What’s in it for vascular surgeons? The concern most pertinent to vascular surgeons is how surgeon “productivity,” both in the sense of volume and quality, will correlate to compensation derived from “shared savings” plans. Surgeons may end up employed by ACOs, or compete for referrals from groups of providers in an ACO. Those surgeons who elect to participate in an ACO organizational structure will undoubtedly be held to quality benchmarks and not simply be paid based on production or case volume. New paradigms will evolve wherein surgeons, once incented by volume alone, will now be incented by quality-based metrics. The manner in which this evolution occurs will depend on two important variables: (1) the need and evidence for the procedure which the surgeon performs, and (2) the quality metrics associated with the operation. Therefore, the responsibility of demonstrating the need and quality measures associated with each surgical procedure we perform rests with surgeons, and accordingly, surgeons must rise to a leadership role in this task.

WHY QUALITY MEASURES WILL MATTER

While vascular surgeons in ACOs will be incentivized to reduce expenditures, they will also be responsible for ensuring that quality surgical care is provided to address the vascular health of the populations they serve. Therefore, a core component of ACO participation is the design, implementation, and interpretation of quality metrics across populations of patients within the ACO.

Several examples of the design and use of quality metrics for general medical care exist in the Medicare Demonstration Project. For example, certain quality metrics in the Arizona ACO (Table II) were simple, plausible, concrete end points defined *a priori* within the structure of the ACO. In diabetes care, the ACO used frequency of blood glucose monitoring as a quality measure. Similarly, in intensive care unit (ICU) care, the participation of an intensivist, either in person or via electronic ICU monitoring, was defined as a quality measure. In both measures, physi-

Table IV. Examples of clinical practice guidelines developed and endorsed by the Society for Vascular Surgery

<i>Clinical problem</i>	<i>Guidelines</i>	<i>Examples of recommendations</i>	<i>Potential quality marker</i>
Carotid disease	JVS V-54 (3) pp e1-31 September 2011 ⁶⁵	Preferential use of medical therapy (antiplatelet agents, statin) in asymptomatic patients with <60% stenosis	Less than 1% of all CEAs occurring in asymptomatic patients with <60% stenosis
Abdominal aortic aneurysm	JVS supplement October 2009 ³⁵	Routine follow-up post-EVAR postimplantation	>90% of surviving EVAR cases undergo postimplantation imaging within the first year
Lower extremity peripheral arterial disease	Hirsch et al. JACC 2006; 47:1-192. ⁶⁶	Exercise therapy prior to intervention for patients with claudication	Fewer than 10% of patients undergoing peripheral intervention without 3 months of supervised exercise therapy

CEAs, Carotid endarterectomies; EVAR, endovascular aortic repair; JVS, Journal of Vascular Surgery.

cians in the ACO demonstrated compliance with quality metrics in these domains, and limited expenditures, earning production bonuses.

For vascular patients, quality measures specific to the care of populations with vascular disease will need to be developed. With a history of leadership in total patient care,²⁸ patient advocacy for disease preventions,^{29,30} and advanced organizational initiatives in quality measurement improvement,³¹ vascular surgeons and the SVS stand in an advantageous position to establish and validate quality measures in vascular care. For example, the Society for Vascular Surgery (SVS) has been active in producing guidelines for carotid disease,³² peripheral arterial disease,³³ venous disease,³⁴ and AAA/TAA,^{35,36} both within the SVS and in broader forums such as the American Heart Association (Table IV).

But, how will vascular surgeons find the time, organizational structure, and practical tools necessary to become voices within the structure of the ACO for vascular care? We believe the answer to this question is twofold. First, as the representative national vascular society, the SVS can lead national efforts to establish guidelines for delivering quality vascular care, especially in terms of more precisely delineating the thresholds where intervention is appropriate in conditions where variation exists, such as peripheral vascular disease³⁷ and carotid disease.³⁸ Second, vascular surgeons in both community and academic settings can actively participate in quality improvement efforts and collaborate in multimodality approaches toward measuring and improving quality in vascular surgery.

THE ROLE OF THE SVS IN ACOs

The first role the SVS can capitalize on is to further clarify and endorse practice guidelines, especially wherein evidence exists to support the formation of these documents. The SVS long ago initiated this endeavor (Table IV). However, the scope of this work can be expanded. Detailed observational data currently contained in regional registries, such as the SVS Patient Safety Organization (SVS-PSO) could be used to generate risk-adjusted, population-specific benchmarks for intervention for carotid, aneurysms, lower extremity bypass, and endovascular interventions. Fur-

ther, after outlining acceptable rates of intervention, quality measures in the performance of these procedures could be established, catalogued, by the SVS.

In several ways, the SVS-PSO represents an ideal forum to manage these tasks. Data collected in the SVS-PSO are protected from discovery or as “patient safety work product,” do not require patient consent for inclusion and do not require IRB approval for collection. Further, CMS has encouraged the creation and implementation of novel service delivery models such as this via the Center for Medicare and Medicaid Innovation, a clearinghouse for efforts to test and implement new payment and service delivery models.³⁹ In settings wherein the management of disease remains controversial, the SVS should continue to increase its role in generating vital comparative effectiveness research. Examples of recent efforts in this regard are efforts to construct clinical trials to determine the best patterns of practice in carotid stenting^{40,41} and claudication.^{42,43} While difficult and lengthy, efforts such as these will be critical in guiding practice improvements.

HOW VASCULAR SURGEONS CAN LEAD QUALITY EFFORTS IN ACOs

A key aspect of care delivery in an ACO is the definition and determination of quality of care. These steps require quality measures, and the work of developing, validating, and implementing quality measures in vascular surgery represents a key role for vascular surgeons.

The notion of surgeons as leaders in national quality improvement efforts has been well established. For example, the Society for Thoracic Surgery (STS) database has used continuous quality improvement techniques to record outcomes and use this information for quality improvement for over 20 years.⁴⁴ These measures have included simple measures such as operative volume, or more complex measures such as risk-adjusted CABG mortality or center-level proportion of renal failure following CABG surgery. Each of these measures undergoes a specific vetting process, wherein the impact, evidence, and potential benefits toward improvements in quality are explored by a working group. Once implemented, these measures serve as quality indicators and guide outcomes reporting and

Leadership In The Care of Vascular Populations

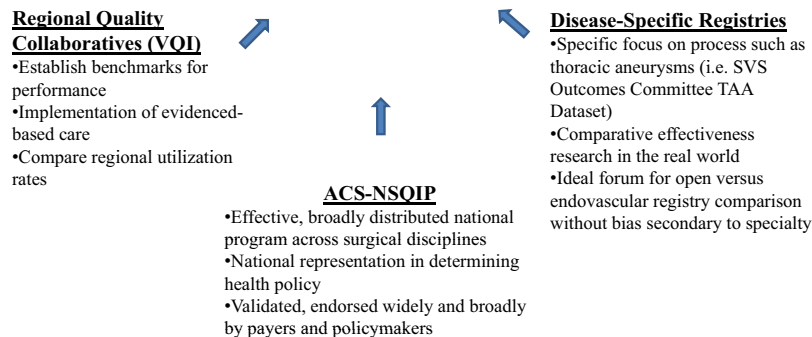


Fig. Potential mechanisms to participate in accountable care organizations (ACOs) in quality measurement and improvement.

quality improvement initiatives.⁴⁵ Broader forums in general surgery have also served as platforms for quality measurement. The American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) has been established as an effective vehicle wherein surgeons can participate in national efforts in surgical quality improvement.⁴⁶ Originally developed within the Veterans Affairs system, NSQIP has established a generalizable, validated, systematic approach to quality improvement in surgery that has been successfully applied in hundreds of federal, community, and academic centers across a variety of surgical specialties.⁴⁷

Finally, at least three efforts in defining quality measures and quality improvement have also taken place within vascular surgery itself (Fig). First, the SVS has developed and implemented the Vascular Registry and the Vascular Quality Initiative, two important steps in quality measurement.⁴⁸ Focused on carotid revascularization, the Vascular Registry was created to allow physicians treating patients with carotid disease to monitor patient and procedural details, record outcomes, and perform critically needed comparative effectiveness research in carotid endarterectomy and carotid stenting.^{49,50} Further, other studies of “real-world” practice have been performed in vascular surgery, using administrative, quality improvement or other data sources to describe the use and outcomes of carotid surgery,^{51,52} abdominal aortic aneurysm repair,⁵³ with thoracic endovascular aortic repair (TEVAR),⁵⁴ and lower extremity revascularization.⁵⁵ Vascular surgeons have used regional quality improvement initiatives such as the Vascular Quality Initiative (VQI) to study and improve outcomes across a variety of vascular procedures. For example, using benchmarks for regional performance in carotid surgery,⁵⁶ vascular surgeons in New England implemented programs to increase the utilization of evidence-based processes of care and demonstrated improved outcomes as a result.⁵⁷ Moreover, these efforts in regional quality improvement were applied in settings outside of the procedures them-

selves, extending into medical care of vascular patients. Using the regional initiative as a platform, surgeons in New England increased the use of adjunctive medications such as perioperative β -blockers,⁵⁸ antiplatelet agents, and statins.⁵⁹ And third, the SVS has developed objective performance goals (OPGs), or outcomes that define appropriate quality measures in lower extremity revascularization.^{60,61} These OPGs have been used both as benchmarks for clinical trials of new devices and therapies as well as establishing goals for performance in community and academic settings.⁶⁰

FUTURE CHALLENGES AND OPPORTUNITIES

Many surgeons will argue that an ACO, a quality measurement tool, or a regional practice guideline represents an unnecessary and unwelcome change in their everyday practice. However, as these changes in health care delivery in the United States proceed forward, an increase in the level of oversight will undoubtedly occur.⁶² Fortunately, the concept of surgeons leading specialty-specific quality measurement within specialty organizations most certainly has precedent. Several prominent national organizations offer quality assessment and quality measurement development in cardiology care, general surgery, and thoracic surgery. Therefore, it is incumbent upon the SVS and its members to lead this task for populations with vascular disease.

These changes will not proceed without challenges. First, the structural and process of care changes necessary will take time and effort away from vascular surgeons, at a time when clinical, research, and teaching commitments already consume significant time and resources. However, nonparticipation on the part of the vascular surgical community will only leave this knowledge gap for others to fill. Vascular surgery was “forward-thinking” in endovascular care, and the rapid and enthusiastic adoption of this “changing landscape” provided a strategic advantage for

vascular surgeons. We should proceed in the same fashion in this instance.

Second, because of the significant expense of many of the procedures we perform, vascular surgeons will have to continue to perform high-quality cost-effectiveness research that demonstrates the population-based value of vascular surgery. Past efforts in carotid and aneurysm surgery will need to be replicated in lower extremity revascularization, most specifically in the use of endovascular therapy in claudication⁴² and critical limb ischemia,⁶⁰ as well as in quality-of-life evaluation across vascular procedures. Further, the use of the vascular laboratory in the management of dialysis access, bypass graft maintenance, and carotid imaging will all need to be delineated to accurately reflect the value inherent in these procedures.

Lastly, vascular surgeons will need to continue to expand the role we play in improving the vascular health of populations at risk, beyond our current procedurally based efforts toward disease-based care. For example, we can take a more active role in ensuring that our patients adhere to evidence-based treatments such as antiplatelet agents, statins, and beta blockers for those patients at high risk for complications.^{63,64} Across these strategies, however, it is vital that the SVS, as well as vascular surgeons in coordination with and from the Society, continue to participate and lead efforts in ensuring that quality, appropriate vascular care is provided to vascular patients.

AUTHOR CONTRIBUTIONS

Conception and design: PG

Analysis and interpretation: PG, EF, RC

Data collection: PG

Writing the article: PG

Critical revision of the article: PG, EF, RC

Final approval of the article: PG, EF, RC

Statistical analysis: PG

Obtained funding: PG

Overall responsibility: PG

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