# Charting a Roadmap for Value-based Surgery in the Post-pandemic Era

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Ten years ago, policymakers sought to renovate American healthcare by replacing its fee-for-service foundations with a value-based care (VBC) framework, which seeks to maximize healthcare outcomes per unit cost of production. To promote this change, payers launched new care models which shifted accountability for outcomes and costs onto providers (ie, physicians and hospitals). However, although the first decade of VBC generated billions of dollars in savings, most progress has been an artifact of modifications to coding and referral practices rather than meaningful transformations to care delivery.[1]

Surgical care embodies the flaws in the current VBC movement. The field's natural inclination for outcomes measurement and access to technological cost levers make it well-suited for VBC. Yet, surgeons continue to be underrepresented in the design and deployment of VBC models such as accountable care organizations, which in turn have been unable to move the needle on surgical costs.[2,3] Even for VBC initiatives targeting surgery – such as bundled payments – the changes in clinical practice have largely been downstream from surgical care (eg, post-acute referrals).[4]

Given that surgical care accounts for roughly 30% of total healthcare expenditures and 50% of inpatient spending, there is a clear need for future VBC reforms that meaningfully engage surgeons, and their collaborators in anesthesiology and nursing, to reduce costs and improve outcomes.[3] Adding to the impetus for change is the COVID-19 pandemic, which has exposed fundamental flaws in healthcare's operating model. The resulting regulatory reforms for service modality (eg, telemedicine), site of delivery (eg, hospital at home), and organization of payment (eg, pressure for site neutrality) have long-reaching implications for both improving value within procedures and better integrating surgical care into the larger care continuum.

In this article, we chart a roadmap for surgical leadership in the next decade of VBC. We argue that existing innovation in outcomes measurement and resource management coupled with the competitive pressures of COVID-19 create a unique window for value creation within surgical care.

## FOUNDATIONS FOR VALUE: FROM MEASUREMENT TO MANAGEMENT

Data has always been a rate-limiting step in VBC, as it is impossible to value that which is not measured. Unfortunately, existing measurements contribute to waste and burnout, and new metric development is a lengthy and inflexible process. In contrast, surgery's culture of continuous learning fosters rapid cycle development and longitudinal documentation.[5] Consider the American College of Surgeons (ACS) National Surgical Quality Improvement Program and Michigan Arthroplasty Registry Collaborative Quality Initiative, which are highly regarded, risk-adjusted, and validated outcomes registries that were built by surgeons for surgeons. Surgeons are now using these registries to drive the uptake of patient-reported outcome measures, which payers have identified as the next frontier for VBC.[6] The field's emphasis on measurement is creating in-roads to clinical integration, with ACS's ''Phases of Care'' model now incorporated into the Merit-based Incentive Payment System.[7]

Surgeons can also measure inputs into the cost curve that elude existing VBC initiatives: the supply chain. Specialists are the primary users of new (eg, DaVinci robot systems) and existing (eg, implant selection) technologies for which increased cost may not be proportionate to increased patient value.[8] Initiatives for responsible resource stewardship, from time-driven activity-based costing to surgeon scorecards, can improve operational efficiency without compromising care quality.[9] Examples such as the Transforming Healthcare Resources to Increase Value and Efficiency Initiative led by ACS and Harvard Business School illustrate how surgeons can access unique levers to increase value in care delivery.

These 2 pillars – outcomes measurement and resource management – create a natural foundation for surgeons to incorporate the principles of value into new payment and delivery models in the post-COVID-19 era.

## FRONTIERS FOR VALUE: FROM OUTBREAKS TO OUTCOMES

To create surge capacity for COVID-19, policymakers took a number of temporary actions which will undoubtedly have a permanent effect on the American healthcare system. First, to increase hospital capacity for COVID-19 patients, policymakers recommended canceling elective procedures and implemented a ''Hospitals Without Walls'' initiative to repurpose Ambulatory Surgical Centers (ASCs). Second, to minimize disruptions in non-COVID-19 care, policymakers relaxed regulations on telemedicine and, when possible, encouraged home- and community-based management of disease. Third, risk of hospital bankruptcies has led experts to reexamine the site-of-care bias in healthcare's pricing model.[10]

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The pressures of the pandemic will give away to a new normal in surgery that is better aligned with the principles of value. For example, the rapid uptake of telemedicine will have important implications for post-operative recovery. Likewise, the emphasis on decentralization and scrutiny of procedure necessity will lead payment models to broaden their scope from specific procedures to the entirety of the condition. To rapidly implement and evaluate these changes in a cost-effective manner, surgeons will need to leverage their existing expertise in outcomes measurement and resource management. We believe models will evolve along the following 3 planks:

## Condition-based Bundles

Bundled payments, which have been the predominant VBC model in surgery to date, establish a risk-adjusted target price for a given episode of care to incentivize efficiency improvements. Research on surgical bundles has found these models to (1) change behavior around when and where to use care (eg, reduce use of skilled nursing facilities) and (2) reduce variability within care delivery itself (eg, reduce heterogeneity in implant selection).[4] Lost revenue from elective procedures under COVID-19 demonstrates the need for broadening shared savings models to provide surgeons with cover to guide behavior change around care utilization. An example of such an approach is condition-based bundles, which base payment on a broader category of diagnoses rather than a procedure alone. For example, a condition-based bundled payment for diverticulitis (as opposed to a colectomy procedure-based bundle) proactively incentivizes the colorectal surgeon to utilize less costly imaging or work-up (computed tomography-imaging, sigmoidoscopy), where appropriate, to effectively manage a patient. The cancellation of all but the most urgent and emergent surgeries in preparation for the COVID-19 surge will provide information on the effects of delaying or never performing some procedures. This will generate new impetus for specialists to scrutinize the appropriateness of surgery altogether, enabling payment models that shift the locus of care optimization upstream.[10]

## Decentralized Delivery

COVID-19 has accelerated surgery's transition from institutional to community settings. New modalities like telemedicine and new facilities like ASCs provide important levers for optimizing site of care to both reduce costs and meet patients where they are. The 5 phases of surgical care offer a useful framework for redesigning clinical workflows for the post-pandemic era.[7] For example, pre- and post-operative consultations could be conducted virtually to increase patient access and reduce wait times. Hospitals could reduce institutional demand and expand gateways to care by investing in ASCs, which could be further economized using resource management methods like activity-based costing and surgeon scorecards.[9] Additionally, surgery's history of rapid standardization (eg, the Enhanced Recovery after Surgery program) will help reduce variation in costs and outcomes for ASCs. To support home-based physical rehabilitation, payers may need to broaden durable medical equipment categories. Importantly, the relevance of patient-reported outcome measures will increase as care transitions to virtual modalities and home-based settings. Rapid cycle testing, implementation, and evaluation of the effectiveness of such measures will enable surgeons to lead the way for decentralized delivery models.[5]

## Team-based Surgery

Previous VBC models failed to meaningfully engage surgeons. For example, researchers estimate that only 22.3% of surgeons are involved with accountable care organizations with considerably variability by specialty.[2] Plausible explanations include a lack of surgery-specific quality measures, misaligned incentives, and poor surgeon representation in model governance. Condition-based bundled payment models and decentralized delivery systems create opportunities to properly integrate surgeons into the broader VBC ecosystem. For example, condition-based payment models, when properly aligned, should stimulate a positive feedback loop wherein primary care physicians preferentially refer patients to high-value, cost-efficient surgical practices. Likewise, transitioning select phases of surgical care to community, home, and virtual settings will require the creation of team-based frameworks with nonsurgical providers. For example, new interdependencies between anesthesia, nursing, and physical therapy will be needed to improve coordination for decentralized surgery models. Surgical education will need to place increased emphasis on leadership training to prepare surgeons to guide care planning with different types of physicians in a diverse array of environments.

# CONCLUSIONS

COVID-19 represents an inflection point in healthcare's value movement, with the pandemic challenging longstanding assumptions about what care is delivered, where services are provided, and how providers are reimbursed. Policymakers seeking the next frontier for value should focus on roads through specialty care, which continues to account for the largest proportion of costs in American healthcare. Surgeons are well-equipped to lead the way, with the field's existing emphasis on outcomes measurement and resource management preparing providers to drive care redesign. Clinical transformation will require broadening the scope of risk-based payments, breaking out of delivery environment siloes, and forging new partnerships with providers. By pioneering care redesign and cultural change, surgeons will help create a compelling vision for clinical transformation towards patient-centered value. Hopefully, this will enable us to fulfill the promise of the triple-aim in healthcare: reduced per capita costs, a better experience of care, and improved population health.

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