When Volume Matters: Towards a Reorganization of Colorectal Surgery in Argentina

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Over the past decades, colorectal surgery has undergone sustained progress in surgical techniques, technology, and multimodal treatment strategies. The standardization of total mesorectal excision, the incorporation of minimally invasive surgery, the optimization of perioperative care, and the integration of neoadjuvant therapies have redefined quality standards. However, this progress has not been uniform in terms of outcomes. Despite the increasing availability of resources, significant differences persist in morbidity and mortality, complication rates, and oncologic outcomes across hospitals and individual surgeons. In this context, the association between procedural volume and clinical outcomes has evolved from an isolated hypothesis into consistent observations in contemporary surgical literature.[1-7] The question is no longer whether volume matters, but how this principle should be incorporated into the actual organization of healthcare delivery.

Evidence from multiple surgical disciplines consistently demonstrates that higher institutional procedural volume is associated with lower operative mortality for complex procedures.[1,3] Likewise, higher individual surgeon volume has been linked to superior outcomes across a broad range of surgical procedures, supporting the concept that accumulated experience has a measurable impact on patient safety.[2] In colorectal surgery, this relationship has also been specifically evaluated; numerous observational studies and systematic reviews have shown that both hospital and surgeon volume are generally associated with improved outcomes in patients undergoing colorectal cancer resection.[4-7]

Rather, it serves as a surrogate marker of organization, accumulated experience, standardized care pathways, multidisciplinary teams, and the ability to recognize and manage postoperative complications effectively. A high-volume center is not necessarily better simply because it performs more operations; instead, greater procedural exposure typically fosters better-developed clinical systems, more experienced teams, and more consistent decision-making.

In Argentina, colorectal surgery continues to be delivered within a highly decentralized system. A large number of hospitals perform intermediate- and high-complexity procedures despite relatively low annual procedural volumes. This model, historically accepted and largely shaped by the fragmented structure of the healthcare system, contrasts with the trend observed in other countries toward concentrating complex procedures in more experienced centers. Such fragmentation affects not only clinical outcomes but also surgical education, efficient allocation of healthcare resources, and the ability to generate local institutional data to support continuous quality improvement.

Centralization, however, is not a concept free of complexity. Implementing regionalized models of care poses substantial logistical, geographic, institutional, and cultural challenges. In a large country with uneven distribution of healthcare resources and multiple healthcare delivery subsystems, referral of patients to specialized centers may create barriers to access if referral pathways are not properly coordinated. Moreover, both surgeons and institutions may understandably resist changes to long-established patterns of practice.

There is also a tension that cannot be ignored: when applied rigidly, centralization may conflict with the principle of equitable access to care. Concentrating complex surgical procedures in referral centers may preferentially benefit patients with greater geographic or socioeconomic access while disadvantaging more vulnerable populations. Consequently, the challenge is not simply to centralize care Within this framework, the debate should not be framed in dichotomous terms—centralization versus decentralization—but rather as a process of reorganizing care according to the complexity of diseases and procedures. Not every patient requires treatment in a tertiary referral center, nor should every hospital be expected to perform every colorectal procedure. Stratifying surgical practice by complexity, with explicit definition of which procedures should be concentrated in specialized centers and which can be safely performed in lower-complexity settings, represents a reasonable strategy.

Such an approach requires redefining the concept of an integrated healthcare network. Effective centralization is not limited to concentrating surgical procedures; it also requires efficient referral pathways, effective communication among teams, shared protocols, and systems for auditing outcomes. Within this framework, lower-volume hospitals retain a critical role in screening, diagnosis, postoperative surveillance, and the management of less complex colorectal conditions while collaborating closely with specialized centers for selected high-risk patients.

Another key aspect is the impact on surgical training. Exposure to an adequate operative volume is a critical component in the development of surgical skills. Excessive fragmentation limits these opportunities, perpetuating a cycle in which insufficient case volume constrains experience and contributes to persistent variability in surgical outcomes. Progressive reorganization of surgical practice therefore has the potential not only to improve contemporary patient care but also to establish more consistent training standards for future generations of colorectal surgeons.

The relationship between procedural volume and outcomes also compels us to reconsider how quality should be measured. Without reliable clinical registries, systematic auditing, and standardized outcome metrics, any effort to reorganize surgical care lacks an objective foundation. Quality cannot

rely solely on institutional reputation or individual perception. Instead, it requires rigorous measurement, transparency, critical appraisal, and an enduring commitment to continuous improvement.

At this point, the role of scientific societies and academic institutions becomes essential. Beyond developing recommendations, they have a concrete opportunity to lead this process by establishing quality standards, promoting multicenter registries, and building consensus adapted to the national context. Reorganization of colorectal surgery should emerge not only through regulatory initiatives but also through a mature discussion led by the professional community itself.

Finally, centralization should not be viewed as a loss of professional autonomy. Rather, it represents an evolution toward more collaborative models of care in which the primary objective is to optimize patient outcomes. In an increasingly complex healthcare environment, maintaining fragmented models of care becomes progressively more difficult to justify.

Colorectal surgery in Argentina has reached a level of development that allows this discussion to take place with maturity. Although the available evidence is not entirely consistent regarding specific volume thresholds, it supports the importance of procedural volume and experience as determinants of surgical outcomes. The challenge is no longer to debate whether volume matters, but rather to define how this principle can be incorporated effectively, equitably, and progressively into the organization of the healthcare system. Delaying this process means accepting a degree of variability in patient outcomes that is no longer defensible.

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