



Surgeon Volume

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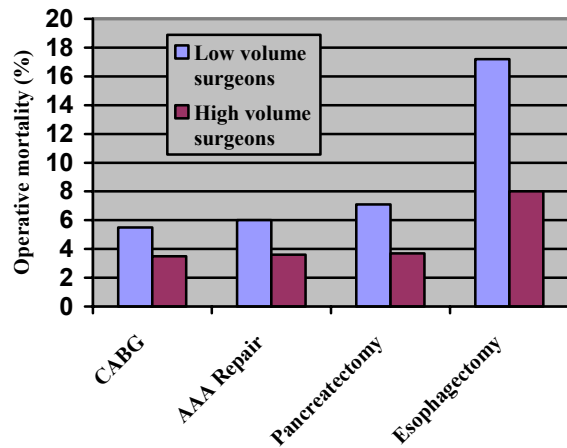
Tens of thousands of Americans die every year undergoing elective surgery. For many high risk procedures, surgical patients can reduce their risks considerably by having their procedures performed at hospitals with low risk-adjusted mortality rates and/or sufficient experience with those procedures.

For some procedures, the right surgeon may be even more important. In particular, high volume surgeons often have markedly lower mortality rates than surgeons who perform those procedures infrequently. The idea of “practice makes perfect” is intuitive to most and makes particular sense for complex surgical procedures, which often require nuanced decision making and a high level of technical skill that come only with experience.

Surgeon experience matters even for patients who are already at a high volume hospital for their surgery. Of course, patients at such hospitals are much more likely to wind up with a higher volume surgeon than they are at low volume hospitals. However, data from a large national study of Medicare patients suggest that patients should not leave surgeon choice to chance.

In that study, high volume surgeons had considerably lower mortality rates for selected cardiovascular operations or cancer resections than less experienced surgeons. Moreover, surgeon volume mattered even among patients already at high volume hospitals. Even at these centers, mortality rates for low volume surgeons were often twice as high as for their higher volume colleagues (or peers).

Figure. Effect of surgeon volume on operative mortality rates at high volume hospitals, based on 1998-9 national Medicare data. (ref)



Growing recognition of the importance of surgeon volume is reflected in guidelines from professional societies. For example, the American College of Surgeons has set minimum volume standards in its credentialing process for “Centers of Excellence” in bariatric surgery. New guidelines from the American College of Cardiology and American Heart Association recommend that interventional cardiologists perform no fewer than 75 percutaneous coronary interventions (PCI) each year.

Potential Benefits of Surgeon Volume Standards

Previous analyses from the Leapfrog Group suggest that evidence-based referral based on hospital-based criteria (volume, selected process measures, and risk-adjusted mortality) could save over 7800 lives each year in the United States. Current evidence about relationships between surgeon volume and mortality suggests that supplementing these standards with surgeon volume criteria could save thousands more. Moreover, surgeon volume standards may be more readily implemented. Through physician credentialing and other mechanisms, hospital leaders may have more control over how surgical cases are

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distributed among surgeons within their centers than they do across hospitals.

The Leapfrog Surgeon Volume Standard

Based on review of the medical literature and the advisement of national experts, the Leapfrog Group has established minimum surgeon volume standards for the 7 procedures already selected for evidence-based hospital referral. They are intended to supplement—not replace—performance criteria established at the hospital level.

Procedure	Minimum surgeon volume (per year)
CABG	100
PCI	75
Aortic Valve Replacement	22
Elective AAA repair	8
Pancreatic resection	2
Esophagectomy	2
Bariatric	20

In addition to providing their overall volumes for each procedure, hospitals will be invited to report the total number of surgeons performing them, the number of surgeons falling below the Leapfrog volume standard and the percentage of surgeries performed by Low Volume Surgeons. A surgeon's cumulative annual volume across all hospitals at which the surgeon operates may be requested of surgeons and used by hospitals in determining if a surgeon performs a low volume of procedures each year.

Hospitals will fully adhere to the guideline if they have no low volume surgeons performing these procedures. They will receive partial credit for only one low volume surgeon or if surgeries by low volume surgeons comprise fewer than 20% of these procedures at their facility.

Challenges

Surgeon volume standards could face resistance if they were too restrictive and patients had problems finding qualified surgeons. For this reasons, minimum volume

standards are based on relatively “low bars.” The standard for PCI is based on ACC/AHA guidelines and not considered stringent by most; standards for the other 4 procedures correspond approximately to the bottom 33rd percentile of surgeon volume nationally.

To avoid penalizing hospitals for surgeons providing emergency care (e.g., PCI for acute myocardial infarction, surgery for ruptured AAAs), low volume surgeons will not be counted if their only procedures are performed emergently. To credit surgeons fully for their experience, surgeons may count operations performed at other hospitals in tallying their procedure volumes.

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