HEART OF THE MATTER

CABG Volume vs. Performance

Thanks to the joint effort of the Society for Thoracic Surgery and Consumer Reports, we can now learn about the quality of coronary artery bypass graft surgical centers both locally and throughout the United States. The report lists how each participating center is following the guidelines established by the STS.

Not all centers are participating in the Consumer Reports review, since it is voluntary. If we don't find our local center listed, we might assume that that center is either too busy doing other things or it is an outlier. Each center is rated on pre- and postoperative care and surgical mortality. Like the Michelin Guide for restaurants, each CABG center is scored on a three-star scale, with three stars for above average, two for average, and one for performance below the STS standards (N. Engl. J. Med. 2010;363:1593-5). Quality measures that are graded, in addition to surgical mortality, include postoperative renal failure, the need for reoperation, the use of beta-blockers before and after the operation and at discharge, lipid-lowering treatment at discharge, the occurrence of stroke, duration of intubations, wound infection, and the use of internal thoracic artery for bypass. Using this methodology, 29% of the centers were outliers, receiving only one star based on their performance during the last 3 years.

BY SIDNEY GOLDSTEIN, M.D.

The volume of CABG surgery over the last few years has leveled off as a result of the wider use of percutaneous coronary intervention. According to the voluntary STS database, 163,149 isolated CABG procedures were performed in 955 operative sites in the United States in 2009 (DCRI executive summary) compared to 146,384 in 365 sites in 2000. The number of CABG centers has increased 2.5-fold in the past decade, while the CABG procedure has increased by about 11% annually. This has resulted in a significant dilution of procedures and an increase in the number of low-volume CABG centers.

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Several studies have examined the relationship between volume and CABG mortality. In the most recent, Dr. David M. Shahian of Harvard Medical School, Boston, and colleagues looked at the association of CABG volume with process of care, mortality, and morbidity in the STS database (J. Thorac. Cardiovasc. Surg. 2010;139:273-82). Of the 737 centers that were included in the STS voluntary reports in 2007, 18% performed fewer than 100 procedures and 38% performed fewer than 150 procedures. The surgical mortality varied from 2.6% in the low-volume centers to 1.7% (a highly significant difference) in centers performing 450 procedures or more. Previous studies have reported a variable relationship between volume and mortality. According to the authors of this most recent study, "high volume does not guarantee a better outcome in any specific program" despite the significant difference between the high- and low-volume centers reported. It is quite possible that low-performing centers did not report their results, as only 733 of the 866 centers performing CABG surgery in 2007 were included in the study by Dr. Shahian. It is quite likely that there were more low-volume centers in action in 2007 among the 133 centers that are not included in the report, and that they could have affected the mortality rates in the low-volume centers. Because much of these data are provided on a voluntary basis, Consumer Reports' rankings may fall short in providing a complete picture of the current CABG quality.

Much of the development of new open-heart surgery programs are driven by both the perception and requirement that in some states surgical backup is needed in order to perform PCI. In many states, however, the availability of surgical backup is no longer a requirement. In the setting of better stents and intervascular support technology, the need for the availability of open-heart surgical programs may no longer be relevant. The other driving force for the development of cardiosurgical programs is the marketing cachet for community hospitals in view of the intense competition between hospitals in many communities.

The development of improved technology and the increased skills of our interventional colleagues have led to much more aggressive PCI. As a result, patients who are referred for surgery have more complex coronary artery disease that is often associated with left ventricular failure and concomitant valvular disease. It is reasonable to question the advisability of the initiation and continuation of low-volume centers. As more low-volume centers enter the CABG surgical arena, it is possible that the marginal differences previously reported might become more significant. With the availability of almost 1,000 CABG centers nationwide, it would seem reasonable to call a halt to further expansion. ■

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CARDIOLOGY NEWS is an independent newspaper that provides the practicing specialist with timely and relevant news and commentary about clinical developments in the field and about the impact of health care policy on the specialty and the physician's practice.

POSTMASTER Send changes of address (with old mailing label) to CARDIOLOGY NEWS Circulation, 60 Columbia Rd., Bldg. B, 2nd flr., Morristown, NJ 07960.

CARDIOLOGY NEWS (ISSN 1544-8800) *is published monthly by Elsevier Inc., 60 Columbia Rd., Bldg. B, 2nd flr., Morristown, NJ 07960, 973-290-8200, fax 973-290-8250. Subscription price is $114.00 per year.*

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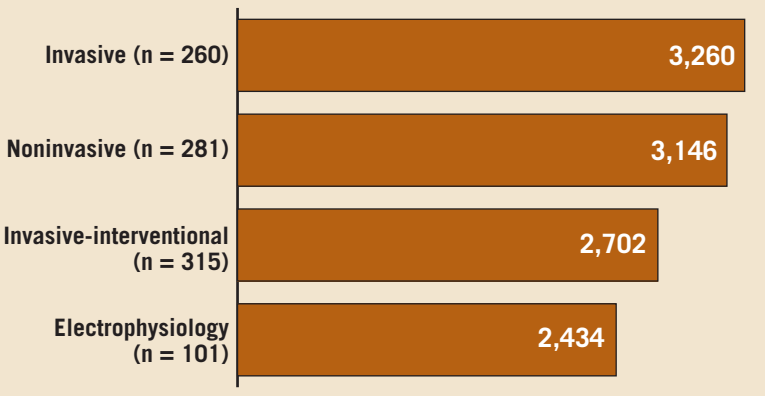

Note: Based on a 2009 survey of physicians in group practice.
Source: Medical Group Management Association