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ATRIUM Clinical Update

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Tracking Quality in Cardiac Surgery

The number of Medicare patients in our hospitals continues to rise and will do so as members of the Baby Boom generation reach the age of eligibility. In 2006, Medicare patients comprised more than 37% of all hospital discharges, but 47% of all hospital costs. As the government looks for ways to reign in costs, Medicare is moving toward the concept of "Value Based Purchasing," in which hospitals are rewarded financially for the quality of care they provide, not just the amount of care[1]. They want to pay for quality, not quantity. While this is a slow process, it is the future direction for reimbursement.

This summer, the first quality requirement relating to cardiac surgery went into effect. Hospitals need to report if they participate in a systematic database for cardiac surgery. While participation is not required at this point, it will be in the future. Hospitals that do not submit data will not get the full Medicare reimbursement[2].

The National Quality Forum (NQF) has published national voluntary consensus standards for cardiac surgery[3]. These standards will be the basis for eventual public reporting of outcomes, but for now they provide guidance for internal hospital quality programs. Approximately 65% of hospitals are currently using standards established by the Society of Thoracic Surgeons (STS)[4], which have formed the basis for NQF's work.

The NQF establishes consensus standards that relate to the procedure named; are within the control of the surgical team that cares for the patient from the decision to perform surgery through one month of postoperative care; address at least one of the NQF's six aims for healthcare; and address structure, process and outcome standards. The six NQF aims are care that is: safe, beneficial, patient-centered, timely, efficient, and equitable[3].

STS groups quality measures for patients undergoing CABG only (no combination with valve surgery) into four groups[4]: perioperative medical care, operative care, risk-adjusted operative mortality, and postoperative morbidity.

Perioperative Care

Perioperative care indicators are scored as "all or none." This means that if one of the four is not done, no credit is received. This approach is used for bundles of indicators of equal importance, all of which have been shown by research to be important to optimal care. The indicators are: *preoperative beta-blocker, aspirin at discharge, beta-blocker at discharge, and anti-lipid therapy at discharge*[4]. Since there will be some patients for whom these medications are contraindicated, the benchmark will take that into account; the goal will be less than 100%. STS did a pilot study and found this approach worked, and it is much easier to collect data this way than if there were more data required for those patients with contraindications. NQF expands this data set slightly by calling for "antiplatelet medication" at discharge[3]. This is an area in which nurses can have a significant impact by double-checking to make sure orders are written and instructions for the medications are included in discharge teaching.

Operative Care

STS points out that there are many intraoperative variables and only one is clearly superior: *using the internal mammary artery* (IMA) for bypass in patients undergoing their first bypass operation. NQF concurs. Other variables such as on- or off-pump, use of treated circuits, cardioplegia composition and temperature are chosen more by surgeon preference than by conclusive research data, and thus, are very difficult to benchmark. Therefore, they are not included in the quality measures, at least until there is a greater body of research examining these variables in randomized, controlled studies[4].

Risk-Adjusted Operative Mortality

This is the most widely used quality measurement[3,4]. STS uses the NQF definition: all patients undergoing CABG who die, including deaths occurring during the hospitalization, regardless of length of stay; and deaths occurring after discharge, but within 30 days of the procedure, regardless of location, unless the death is clearly unrelated to the procedure, such as a fatal traumatic injury. Risk adjustments are statistical tweaks to data that take patient considerations into account. It allows, for example, a surgery program that has a much older patient population to be compared on the same terms with programs that serve younger patients.

Postoperative Risk-Adjusted Major Morbidity

These are the complications that we all want to avoid. The STS considers these as a group – another "all or none" measurement[4]. This approach is recommended because a patient with a common complication can be rescued at one facility and may die at another, for reasons unrelated to the surgery. These complications are: *stroke, renal insufficiency, deep sternal wound infection (see Update March 2009), reexploration for any cause, and prolonged intubation/ventilation*. As with mortality measures, this measure is also risk-adjusted.

Differences With NQF and STS

The NQF standards include surgical volume as a quality measure[3], which the STS has dropped because the volume-outcome relationship for CABG is weak. STS points out that this value has been used as a substitute for more specific outcome measures, and since there is a wealth of data for CABG patients, a substitute measure is not needed[4]. In addition, the NQF has measures relating to timing of antibiotic administration[3]. The STS did not include these because they are already being measured in other surgical quality improvement programs.

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In The Literature

Enhancing Multicultural Cardiac Care

The current issue of the *Journal of Nursing Scholarship* includes a valuable study examining factors that causes Jordanian men and women to delay seeking health care for symptoms of acute MI. Researchers found that it was family members who called for ambulances, so it is critical to include family members in discharge teaching. In contrast to Western cultures, elderly Jordanians had shorter delay than younger people, following the Muslim value placed on caring for the sick and elderly. This article is a terrific resource for demonstrating the critical importance of cultural competence in nursing practice.

Source: Khraim FM, Scherer YK, Dorn JM, Carey MG: Predictors of decision delay to seeking health care among Jordanians with acute myocardial infarction. *Journal of Nursing Scholarship* 2009;41(3):260-267. PubMed Citation

Another Look at Drawing Blood Samples

As an ED nurse, I let out a sigh of relief when the paramedics brought in vials of blood drawn when they started the IV in the field. But a clinical evidence review published in the *American Journal of Critical Care* should make us all think twice about that practice. Hemolysis is the main reason laboratories reject specimens. Best practice is a hemolysis rate of 2% or less. The studies cited in this article reported the lowest hemolysis rates from newly placed IV catheters at 12.8%. The authors determined class III evidence against collecting blood from peripheral catheters; that is, "no evidence of any benefit often some evidence of harm." If you're still obtaining blood samples when starting IVs, this is a must read.

Source: Halm MA, Gleaves M: Obtaining blood samples from peripheral intravenous catheters: best practice? *American Journal of Critical Care* 2009;18(5):474-478. PubMed Citation

Does Your Unit Promote Collaboration?

A fascinating article in the current issue of *Nursing Management* looks at evidence-based design of the physical space in which nurses work. The author describes how design and use of space affects the free flow of ideas and communication among members of the care team. He cites research that corridors are a "neutral" zone – not "owned" the way a room or workspace is. In this neutral zone, physicians were more likely to express uncertainty; seek out, listen to, and act on nurses' insights than in other care areas. Instead of focusing exclusively on tasks, our unit redesigns should also include this ground-breaking research on the relationship between the physical plant and communication.

Source: Becker F: At one with your surroundings. *Nursing Management* 2009; 40(8):24-27. PubMed Citation

On the World Wide Web

QuPS.org

This site compiles published quality and safety standards for easy access. For a crosswalk of surgical quality standards applicable to cardiac surgery, visit http://qups.org/perf_measure.php?c=2

Web M&M

While missing traumatic injuries is rare, the consequences can be fatal. Here's a great discussion of missed chest trauma: http://webmm.ahrq.gov/case.aspx?caseID=202

Just for Fun

Here are three online heart surgery simulations for you to try: http://tinyurl.com/mus5ke

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Looking Ahead

The NQF has identified research priorities; these are areas deemed important, but there is not enough research to back them up as consensus standards. These include: measuring quality-of-life after surgery, measuring efficiency (length of stay is considered "primitive"), evaluating the appropriateness of surgical intervention at each step of the decision process, and developing a global smoking cessation measure for all hospitalized patients[3]. Nurses can play a key role by performing research in all of these areas and contribute to enhancing the quality of care for patients undergoing CABG surgery for decades to come.

(For additional information on the importance of nursing care in meeting the Centers for Medicare and Medicaid Services quality indicators, see: Brenner ZR, Salathiel M: The nurse's role in CMS quality indicators. *MedSurg Nursing* 2009;18(4):242-246.

Sources

1. CMS Pay-for-Performance Workgroup. U.S. Department of Health and Human Services Medicare Hospital Value-Based Purchasing Plan Development Issues Paper. Washington, D.C. 2007.

2. QualityNet: Reporting hospital quality data for annual payment update.

3. National Quality Forum. National Voluntary Consensus Standards for Cardiac Surgery: A Consensus Report. Washington, D.C.: National Quality Forum; 2004.

4. Shahian DM, Edwards FH, Ferraris VA, et al. Quality measurement in adult cardiac surgery: Part 1 - conceptual framework and measure selection. *Annals of Thoracic Surgery*. 2007;83:3-12. PubMed Citation