

# The role of outcomes research in improving patient care

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Society has an interest in, and physicians a responsibility for, the delivery of medical care of the highest possible quality. Efforts to promote quality include government programs such as the Medicare "Pay for Performance" initiative in the US. Professional medical organizations worldwide set standards for training and certifying examinations for doctors. More recently, attention has focused on measuring treatment outcomes as a way of assessing the quality of patient care.

Outcomes research is the science of measuring the results or consequences of medical encounters. Traditionally, surgical outcomes have been presumed to be fairly similar among qualified surgeons. Differences in treatment outcomes, such as the incidence of recurrent stress urinary incontinence after a corrective procedure, have generally been ascribed to patient selection rather than to physicians' performance. Indeed, there has never been a randomized clinical trial assessing differences between surgeons performing a particular procedure using the same surgical technique. In fact, trials that include surgical therapy have assumed surgical equivalency in both arms, despite the growing body of evidence to the contrary.

Volume–outcome studies show higher perioperative mortality rates after complex surgical procedures performed in low volume hospitals or by low volume surgeons. Analyses of large national databases have confirmed higher rates of postoperative morbidity and long-term complications when common procedures, such as radical prostatectomy, are performed by low volume surgeons within the same hospital—even when fully corrected for patient age, comorbidity and case mix (cancer stage and grade). Furthermore, there are striking variations in outcomes even among high volume surgeons. In a recent study reported by Bianco *et al.* at the ASCO Prostate Cancer Symposium (February 2006), the probability that a patient's cancer would recur was closely related to the life time experience of the surgeon performing the procedure. The study further documented a disturbing variance among surgeons of comparable experience.

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If there are real differences, even among well trained, experienced surgeons, in perioperative morbidity and long-term results, what should we do about this, as a society and as a profession? The answer would be relatively easy if we were airline pilots. Governments have recognized the need to create centers for specialty care when the consequences of differences in delivery of care are serious, which is why there is widespread support for designated centers for cancer and for heart disease. In Great Britain, major procedures for cancer are now restricted to centers and surgeons who perform a minimum number of cases. In the US, some third-party payers are steering patients to high volume hospitals and surgeons for certain high risk procedures. In Michigan, insurance companies are supporting the costs of collecting data on outcomes by hospital and by physician, on the condition that the results must be shared among providers so that underperformers, aware of their results, will be motivated to improve.

Differences in treatment outcomes between surgeons also point to the urgent need for research focused on surgical technique. If technical variations are responsible for differences in outcomes, then techniques should be documented and analyzed. Some surgeons have videotaped each operation to review the films once the outcomes are known. In the age of molecular biology, studying the effects of surgical technique may seem out-dated if not irrelevant, but the magnitude of the variation in cancer control among surgeons in the Bianco *et al.* study was as powerful as the effect of adjuvant hormonal therapy for breast cancer.

Decades ago surgical research defined the parameters for optimal wound closure in order to minimize the risk of dehiscence. In this era of evidence-based medicine, the time has come for surgeons to embrace the opportunity to study what they do, learn which technical steps matter, improve their own skills and teach the next generation of surgeons to use techniques that result in the best outcome for their patients.

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#### Competing interests

The authors declared they have no competing interests.

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