

If I Had a Hammer

Building Alignment and Accountability

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THE annual cost of preoperative medical testing for all types of surgery in the United States was as high as \$30 billion in the 1980s, substantially due to unnecessary diagnostic testing.¹ A more recent study, restricted to ambulatory surgery, estimated the annual cost to be \$18 billion.² The value of routine preoperative medical testing has been questioned since the 1990s.¹ In a study of approximately 20,000 patients undergoing elective minor ophthalmologic surgery, patients were randomized to no testing or a standard battery of tests.³ There were no differences between the two groups in the overall rate of intraoperative complications. This landmark study concluded that routine preoperative medical testing does not increase the safety of minor procedures. Fifteen years later, Kirkham *et al.*⁴ report in this issue of *ANESTHESIOLOGY* a population-based study evaluating preoperative blood work before low-risk surgeries including ophthalmologic surgery. These authors demonstrate that routine blood work was done before nearly a third of low-risk, mainly ambulatory, surgeries. More importantly, there was also significant regional variation in the amount of preoperative testing done that seems unlikely to be explained by patient comorbidity. Geographic location of surgery was the strongest predictor for preoperative laboratory testing.⁴ Similarly, Chen *et al.*⁵ recently demonstrated that preoperative testing before cataract surgery was more likely to be associated with the practice patterns of the ophthalmologist and whether patients had a preoperative visit rather than with patient comorbidities. Over half of patients had at least one preoperative test before cataract surgery,⁵ despite significant evidence and national guidelines against the utility of routine preoperative testing in such patients.^{6,7}



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One of the issues contributing to misuse of preprocedure testing is the inability of specific institutions to align various departments. Because the anesthesiologist performing anesthesia for the procedure is not generally the clinician who evaluates patients preoperatively, the lack of alignment will contribute to both excessive testing and cancellations. Kirkham *et al.*⁴ correctly point out that providing institutions and individual providers feedback about rates of testing has the potential to reduce low-value care. It is critical to the mission and performance of any hospital to ensure alignment of staff and departments and to establish clinician accountability.

Recently, multiple primary care and specialty physician groups joined forces to create the “Choosing Wisely” campaign, aimed directly at decreasing the burden

of unnecessary interventions, specifically where significant risks of a test, procedure, or treatment exceed its benefits.⁸ Each of the participating professional physician societies provided a list of five things that should be performed less often and the necessity of which should be questioned by physicians and patients when suggested. The American Society of Anesthesiologists is a partner in the Choosing Wisely Campaign and encourages ongoing dialogue between patients and anesthesiologists to eliminate unnecessary tests and procedures.⁹ Common low-value tests to question in anesthesiology include baseline laboratory studies in healthy patients without significant systemic disease when blood loss is expected to be minimal.¹⁰ However, baseline laboratory studies were ordered in a third to half of patients in available major studies.^{4,5}

Diagnostic efficacy and effectiveness refer to whether the test correctly identifies abnormalities and changes

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diagnosis.¹¹ Therapeutic efficacy and effectiveness test whether the test changes management and patient's outcome. For example, although an abnormal electrocardiogram may identify abnormal Q waves, it may not change diagnosis or management on a patient with a good functional capacity before a low-risk surgical procedure. The American College of Cardiology and American Heart Association guidelines on perioperative risk assessment do not recommend routine preoperative electrocardiogram in otherwise healthy asymptomatic patients regardless of patient age.¹² Guidelines actually recommend against getting an electrocardiogram in patients undergoing low-risk procedures, because routine screening is not useful and may be harmful.¹² Despite these recommendations, a recent study demonstrated that electrocardiogram was performed before nearly a third of low-risk procedures.¹³ This study also demonstrated significant regional variation, sometimes as much as 30-fold difference between institutions.

Many physicians express the fear of increased medicolegal risk if they do not routinely order screening or preoperative tests. From a medicolegal standpoint, it may be better to avoid an unnecessary test if the management of an abnormal result is unclear.¹¹ Should a clinically insignificant abnormal laboratory test finding be uncovered and not treated, legal action may result. Later complications, whether they were related to the abnormal results, maybe attributed to lack of follow-up on the ordered tests.

The preoperative period is not unique. The Institute of Medicine reports that waste accounts for 30% healthcare spending in the United States.^{14,15} The Institute of Medicine offered recommendations for a better healthcare system,¹⁶ many of which involve cutting unnecessary testing. These included the use of evidence-based clinical practice guidelines and provider clinical decision support tools (*e.g.*, cognitive aids); patient-centered care; partnerships to coordinate prevention; health promotion and community-based interventions to improve health outcomes (*i.e.*, population health); system engineering tools and process improvement methods to decrease waste (*e.g.*, time-driven activity-based costing); a realignment of financial incentives to promote delivery of value-based medicine; and increased transparency about provider performance regarding quality, costs, and outcomes.¹⁶

The perioperative surgical home (PSH) is a physician-led, novel model of perioperative healthcare delivery that aims to coordinate care and improve the patient experience and clinical outcomes while controlling costs.¹⁷ The PSH can facilitate the use of the preoperative clinic to gather the medical history from patients and encourage the use of standardized protocols, prehabilitation programs, and individualized perioperative care plans.¹⁷ The preoperative clinic can also help coordinate intraoperative and postoperative care.

Kirkman *et al.*⁴ note that preoperative medical consultation, but not anesthesia consultation, was associated with preoperative blood testing that appears to be unsupported by

current evidence based guidelines. Adequate anesthesiologist leadership of preoperative clinics can bend the cost curve by cutting wasteful preoperative consults and unnecessary laboratory tests. The problem is not only the unnecessary test but also the actions taken as a result of an abnormal test. A false-positive result, or an abnormal result that may not affect the anesthetic or surgical management, can lead to further testing, consults, and procedures that incur additional costs and potential complications. In an era of value-based medicine, the only justification of preoperative screening is that the health benefits outweigh the health risks and are worth the dollar costs. Laboratory tests are not good screening tools.

We can work with medical and surgical colleagues to construct the PSH smoothly and speedily and continue to update, adjust, and renovate. It will take creativity, collaboration, and hard work. By spearheading this construction process, anesthesiologists will be recognized as the natural leaders of the perioperative period. This is our opportunity to make a substantial and innovative improvement in the patient experience and the healthcare delivery system.¹⁸

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