 Decreasing Inappropriate Laboratory Test Utilization

Controlling Costs and Improving Quality of Care

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Laboratory directors, hospital administrators, managed care plans, insurance companies, and governments continue to grapple with the competing demands of controlling health care costs, maintaining or improving quality of care, and addressing demands for increased access to newer expensive technologies. Although annual expenditures for laboratory tests are a relatively small part of total health care costs, clinical laboratory testing has not been spared from cost containment efforts. Controlling laboratory costs can be divided into two categories: good business practices and management systems that are part of stewardship of resources, along with systems designed to control laboratory utilization. Much has been written about the latter, but our understanding of how to do this without adversely affecting patient safety or quality of care is incomplete. Moreover, although a number of approaches to controlling laboratory utilization have been used, it is not known which approach is the most effective or how to integrate these approaches with other systems designed to control laboratory costs.

One approach that is linked to medical necessity has been to control costs by decreasing utilization of tests that are not medically necessary. Not surprisingly, defining appropriate use of many laboratory tests has been more difficult than it might seem. Much progress has been made in the past few years, yet much work remains to be done. Without good evidence regarding appropriate utilization for many laboratory tests, alternate approaches have been used to reduce utilization of tests that most providers would agree are inappropriate. One example has been to eliminate duplicate orders for tests within specified time frames. These approaches can be effective (as discussed below) but do not address the issue of tests that are ordered only once yet are not clinically appropriate. A similar approach has been to limit laboratory testing in the inpatient setting to only those tests necessary for a patient’s immediate medical care, forgoing other testing such as that needed to manage chronic but stable medical conditions. There is merit to this approach. Not only does it decrease the cost of hospitalization, but it also helps shift disease management into lower-cost outpatient settings where most chronic
conditions should be managed. The obvious drawback to this approach is that it focuses only on the inpatient setting. It also is not clear as to how widely this approach is used or how effective it is where it is in use.

A third approach has been active management of test utilization by laboratory staff. This approach has been used mostly in academic medical centers, often integrated as part of training for residents and fellows. This approach can vary from simply having laboratory staff act as gatekeepers for specific tests to more robust, systematic methods for improving test utilization. Obvious disadvantages to this approach include lack of standardization between institutions, questions about scalability, variability in the effectiveness of the individuals involved, the labor-intensive nature of the approach, and the common perception that this approach puts laboratory staff members in an adversarial role with providers. Although this approach has been shown to be effective in specific situations, it is not clear that the approach is effective or practicable on a wider scale.

A fourth approach has been the development of laboratory “formularies” similar to the mechanisms used by pharmacies to guide appropriate drug utilization and control expenditures. It also is not clear how widespread this approach has been as a method for controlling laboratory test utilization. It does have the advantage of removing individual interventions and thereby making for a more objective approach. If developed correctly, it would have the additional advantage of using guidelines/restrictions that are based on the best current evidence. To be accepted by providers, which plays an important role in the effectiveness of any approach, formularies need to be strongly based on evidence regarding appropriate test usage, but as previously noted, this is lacking for many laboratory tests.

Despite their individual drawbacks, each of these approaches can be facilitated by the use of information technology (IT) systems. Not only does this allow for more consistency and standardization, but an IT-based approach also can be scalable at relatively low cost across institutions sharing IT systems. Use of IT systems also allows for rapid updates and changes, as well as interfaces with other data systems within organizations (eg, pharmacy and financial information). Perhaps the greatest opportunity is with integrated electronic health care systems, where order sets can be developed for specific medical indications. These orders sets can be crafted so that only certain tests can be ordered for that indication, thereby precluding use of tests that are not necessary. However, once again, this approach relies on the availability of good evidence regarding appropriate test utilization. Although IT systems by themselves cannot improve ineffective approaches to controlling test utilization, in an era of electronic health records, it is unlikely that effective approaches can be developed without their use.

In this issue of the Journal, two articles present different approaches for controlling laboratory test utilization. In the first article, Procop and colleagues report the results of a comparison of two clinical decision support tools to reduce the number of duplicate tests ordered. Both tools started with notification to ordering providers that a test being ordered was a duplicate test that “was not usually necessary more than once per day.” The first tool was labeled the Hard Stop, which required ordering providers to telephone a member of the laboratory staff to justify the request for the duplicate test. The second tool was labeled the Smart Alert, which allowed ordering providers to bypass the notification and complete the order. Not surprisingly, the Hard Stop tool was substantially more effective in reducing the number of duplicate tests performed, as well as yielding significantly more cost savings. In the second article, Greenblatt and colleagues report the result of a prospective review system to help control the cost of tests referred from their hospital to external reference laboratories. In their approach, a subset of laboratory tests were designated that required a review by clinical pathologists (initially a clinical chemistry resident) before being sent out to a reference laboratory. Based on cost and medical urgency, some tests could be referred to the reference laboratory by the resident without input from the laboratory director. Other send-out tests could only be referred with the concurrence of the laboratory director. Subject matter experts also were consulted to discuss medical necessity. As noted by the authors, the specific effect of this approach to reduce costs could not be measured since it was just one of a number of interventions designed to reduce the cost of reference laboratory testing at their institution.

What are the lessons learned from these two articles? First, it is reassuring that efforts to minimize unnecessary expenditures for laboratory tests continue and that academic pathologists lead those efforts. Second, this is a complex topic and, as with any complex topic, there are no simple answers. It is likely that the optimal approach will require a combination of approaches. Third, even if an IT system is involved, a great deal of input is still needed, both for designing the system and for making it work. Put another way, implementing any approach requires a substantial investment in time and effort: either upfront investment needed to develop a system that requires little day-to-day involvement (eg, a test formulary) or for implementing an approach that relies more on direct oversight by laboratory staff members. Last, the article by Greenblatt et al notes the role of trainees, which in this case provides an opportunity for them to learn principles of management and how management is directly linked to patient care. As a profession, we still have a long way to go in this area of management, but developing and implementing effective approaches for controlling inappropriate test utilization force us to better define and understand how laboratory tests are used and why.
References


