Another Laboratory Test Utilization Program: Our Approach to Reducing Unnecessary 1,25-Dihydroxyvitamin D Orders With a Simple Intervention

To the Editor

We were very interested in the report by Jeffrey Warren1 outlining a comprehensive laboratory test utilization program in a large academic medical center. The report highlighted the implementation of an interdisciplinary committee to review utilization patterns, appropriateness, and new test requests in combination with significant information technology (IT) resources dedicated to computerized provider order entry decision tools. Over 5 years, they decreased send-out testing expenses normalized to clinical laboratory expenses.

We implemented a similar laboratory test utilization program in a 250-bed pediatric hospital that processes approximately 1,000 requisitions daily. Send-out expenses are a proportionally large burden on clinical laboratory and hospital budgets.2 We developed a strategy to manage “flagged” test requests with minimal IT resources. Our utilization committee operates similarly to the committee described by Warren and selects tests to manage, remove from the formulary, or add to the formulary. Tests chosen for management by the committee are flagged in the laboratory information system with a “UM,” for utilization management, preceding the test name.

In 1 example, the committee reviewed 1,25-dihydroxyvitamin D orders. At our institution, we sent close to three hundred 1,25-dihydroxyvitamin D tests to our major reference laboratory in 2011. We performed a retrospective medical record review for all orders during a 6-month period and found that 66% of the 1,25-dihydroxyvitamin D tests were ordered in error, and in these cases, 25-hydroxyvitamin D [25(OH)D] was the intended test. We created an e-mail template describing the utility of both vitamin D tests and asked the provider if he or she wanted to modify the order to 25(OH)D. This template was managed by the frontline send-out staff, consisting of 3 dedicated staff. Faculty was involved when the provider did not respond within 2 days, which was rare. The response from providers was positive, often expressing appreciation for the education. As a result, many of the providers corrected order sets that had erroneously been built with 1,25-dihydroxyvitamin D. Two months after the intervention started, we instituted privileging to endocrinologists, meaning we did not manage their 1,25-dihydroxyvitamin D test requests since nearly all were ordered correctly.

After 7 months of the intervention, we found that 58% (n = 134) of the 1,25-dihydroxyvitamin D test orders were cancelled and modified to 25(OH)D, reducing our monthly orders from 25 to less than 10. This intervention required minimal IT resources and was reasonably managed by the send-out staff in their daily work flow. Our simple intervention was able to increase the value of vitamin D testing to patients by eliminating wasteful, unnecessary tests that were ordered in error. This type of intervention can be used as a model for other commonly misordered tests.
system. Another appealing aspect of the program instituted by Dickerson et al is the use of standardized information templates that include clearly articulated test order options. This feature has doubtlessly contributed to user buy-in and satisfaction. Direct comparison of 1,25-dihydroxyvitamin D ordering patterns—before and after implementation of a utilization control measure—is a particularly effective and impactful example. Optimal resource utilization will continue to be an important facet of laboratory medicine practice.

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References

The Author’s Reply
Correspondence from Dickerson et al highlights the laboratory test utilization program at the Seattle Children’s Hospital (University of Washington). This effective program includes features that differ from the University of Michigan Health System program, which I recently described. Their ability to substantially affect test utilization despite the deployment of less extensive information technology (IT) resources is particularly important because it mitigates a major barrier to implementation (IT costs) and allows the relatively rapid deployment of utilization management actions. Early in our University of Michigan experience, there was a significant time lag between Formulary Committee decisions and implementation of the IT component of our computerized provider order entry system. Another appealing aspect of the program instituted by Dickerson et al is the use of standardized information templates that include clearly articulated test order options. This feature has doubtlessly contributed to user buy-in and satisfaction. Direct comparison of 1,25-dihydroxyvitamin D ordering patterns—before and after implementation of a utilization control measure—is a particularly effective and impactful example. Optimal resource utilization will continue to be an important facet of laboratory medicine practice.

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