EDUCATIONAL COMMENTARY – TEST UTILIZATION MANAGEMENT

Educational commentary is provided through our affiliation with the American Society for Clinical Pathology (ASCP). To obtain FREE CME/CMLE credits, click on Earn CE Credits under Continuing Education on the left side of our web page.

**Florida licensees, please note: This exercise will fulfill your state requirement for credit in Supervision / Administration.**

Learning Objectives

On completion of this exercise, the participant should be able to:

- describe how increased value is defined for a test utilization program;
- discuss 3 tactics or tools associated with test utilization management;
- distinguish overutilization from underutilization of tests; and
- describe the basic elements of a utilization program.

Overview

Test utilization is about managing a limited resource: health care dollars. Shrinking reimbursements and changes in payer models have brought a renewed focus on measuring the value of test results in improving patient care. Utilization management (UM) is a strategy used to ensure that laboratory tests provide high-quality, cost-effective patient care.

Laboratory testing accounts for 3% to 5% of total health costs but can impact 95% to 97% of downstream patient care.¹ A commonly quoted statistic says that laboratory data contribute to more than 70% of clinical decisions.² Whether 70% or 95%, it is clear that the laboratory has a big impact on both patient outcomes and downstream services in the health care industry.

The cost of unnecessary testing is not a new topic. The use of automated chemistry analyzers and predefined chemistry panels caught the attention of the Centers for Medicare & Medicaid Services (CMS) in the 1990s. Concerns about unnecessary testing and the associated costs led to the “unbundling” of these test panels to let clinicians order only the tests they needed, while reducing unintended duplication of testing. Since that time, test menus have expanded and payers, both government and private, have applied increased restrictions to tests deemed unnecessary. Payment restrictions may include frequency limits or a requirement for preauthorization. Payment may be denied based on specific diagnosis or age categories.

Inpatient testing is part of a global billing protocol in which all services for an episode of care are wrapped into a single payment. Outpatient laboratory tests are still billed individually per test under the Clinical Lab
Fee Schedule but are moving to a global fee model similar to inpatient billing. The Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) defines how providers will be reimbursed, based on value and a defined episode of care. Those episodes of care will be similar to the diagnosis-related global payment structure for inpatient care. MACRA created a Quality Payment Program that rewards value over volume with two new systems. The first is the new Merit-based Incentive Payment System and the second is provider eligibility for bonus payments under alternative payment models.

MACRA builds on the pay-for-performance model generated by the Patient Protection and Affordable Care Act. Outpatient physicians have traditionally received payment based on a fee-for-service schedule but, over time, will be required to switch to a value-based care payment system. If they are unable to comply, there will be systematic reductions in payment over time. The changes mandated by MACRA began in 2016 and will continue to be transitioned into place with the final step implemented in 2026.

As these government-designed reimbursement models move forward, private payers are adopting the same models for their own reimbursement plans. An effective UM program can help laboratories prepare for this shift from a volume-based, fee-for-service system to a value-based, episode-of-care billing system.

Laboratory test UM (also referred to as test utilization management [TUM], test utilization [TU], and lab utilization [LU]) can play an important role both in improving patient outcomes and reducing expenses for a health care organization. This discussion will provide a broad overview of strategies, tools, and ideas for implementing and supporting a UM program at such facilities.

Appropriate and Inappropriate Tests: Guiding Orders for Optimal Outcome

Effective UM means that the appropriate test is performed, one which will provide the right result, at the right time, for the right patient. This section will focus on identifying how an inappropriate test is selected and review some of the tools and tactics used to guide appropriate test choices.

One familiar example of utilization guidelines concerns the management of blood products. Test UM is similar in that it uses tools, guidelines, and education to provide optimal patient care. At the same time, the benefits of a limited resource are maximized.

Inappropriate tests are said to be examples of misutilization. Misutilization includes both ordering a test that is not needed and not ordering a test that is needed. A 15-year meta-analysis concluded that underutilization is more prevalent than overutilization (44.8% vs 20.6%). These figures are consistent with current studies suggesting that there is a 30% waste factor in health care practices.

Overutilization is said to occur when a test is performed that has no effect on or adds no value to the patient’s care. Although an individual test may not be expensive, the waste is much deeper than simply value is increased by reducing costs, improving quality, or both.
the monetary cost to perform that test. The time spent by clinicians, nurses, offices, payers, and patients to manage the information is considerable and translates into less time to focus on actual patient care. Unnecessary testing risks generating additional interventions, such as imaging studies, which can increase the length of stay for an inpatient or out-of-pocket expense for an outpatient. A powerful example of the impact of unnecessary testing is in busy emergency departments where long wait times can significantly affect quality of patient care and patient satisfaction.

Unnecessary phlebotomy collections can lead to iatrogenic or hospital-acquired anemia, as has been well documented in neonatal and geriatric patients. Hospital-acquired anemia is associated with poor wound healing, increased infection rates, and increased length of stay. Because phlebotomy is not without risk, an increased rate of complications and decreased patient satisfaction can occur in inpatient settings. Conversely, outpatients may take the opposite view, seeing additional laboratory tests as a proactive in their health care; patient education can be an important tool in combating this belief.

Strategies or tactics to reduce over-testing include electronic alerts in the form of questions, guidelines, or links to existing test results. These interventions can be applied to specific situations using rules-based guidelines. Examples of overutilization include the following:

- **Tests ordered more frequently than needed**: Use research consensus recommendations for retesting intervals and alert clinicians when a test is ordered too frequently. One tactic is to limit the ability to place orders that are scheduled to automatically repeat at regular intervals (e.g. standing daily orders on inpatients).
- **Test results that will never change**: Build a hard stop with a link to the existing test results (e.g. specific gene mutations or *Clostridium difficile* by polymerase chain reaction (PCR) for a single episode of care).
- **Conditions where specimen type is incorrect**: Alert when a specimen type is incorrect for the test selected (e.g. *C difficile* by PCR order on a formed stool or a urine lead test when the preferred screening test is performed on blood).
- **Multiple tests that provide the same information**: Build alerts to inform the clinician about tests ordered at the same time or recent results that give the same information (e.g. C-reactive protein and erythrocyte sedimentation rate ordered together).

Underutilization is said to occur when a test is not ordered that could change the treatment, diagnosis, or outcome for a patient. Underutilization is harder to identify but common interventions to prevent missed tests include reflex tests, disease-specific order sets, algorithms, and pathologist consultations for complex or rare testing (e.g. genetic tests or esoteric, seldom performed, testing). Examples of underutilization include the following:
• **Tests required to monitor high- and moderate-risk medications**: Alerts link drug orders to recommended test monitoring (e.g. primidone has a recommendation to perform a baseline complete blood cell count then repeat at 6-month intervals).

• **Tests that require prerequisite testing or specific data submission before testing**: Alert that a test will not be performed if these conditions are not met.

• **Incomplete initial testing**: Alert when a test is ordered that is insufficient for diagnosis (e.g. a urine culture when no urinalysis has been performed).

• **Incomplete reflex testing**: Provide automated reflex orders or alerts (e.g. reflex Western blot for a positive result on a Lyme disease antibody test).

• **Not monitoring chronic disease at recommended intervals**: Alert based on rules associated with specific diagnosis (e.g. HbA1c testing for patients with diabetes).

When building test order systems, the following practices can reduce both overutilization and underutilization.

• Name (or rename) tests in the electronic health record to make them consistent with common nomenclature, making them easier to quickly identify. Use customer service calls or cancelled or reordered test lists to identify specific opportunities.

• Move preferred tests to the top of the order list.7

• Delete obsolete tests (e.g. bleeding times) or alert when a more specific test is available (e.g. an erythrocyte sedimentation rate order may include a comment suggesting testing C-reactive protein to detect acute-phase inflammation).8,9

• Embed common algorithms to assist clinicians with test choice.

• Review your test menu, including order sets and reflex tests, against current best practices and organizational needs on a regular basis.

**Tactics and Tools**

Interventions designed to drive appropriate utilization have been trialed and evaluated for effectiveness over the past 15 years.10,11 Specific interventions are recommended based on documented outcomes and may include designations for the strength or weakness of the intervention. For example, deleting an obsolete test from the menu is considered a strong intervention that immediately stops use of the test. Education is considered a weak tool when used alone but continues to be a required element in the overall success of UM programs.9 Education is usually focused on clinicians but patient education can be an important part of the process. Failure to include an educational component may risk failure for the intervention.
With the widespread use of computerized physician order entry it should come as no surprise that the use of electronic orders is recommended as a best practice in current reviews. As well as improving the accuracy of the actual orders, these systems allow a variety of alerts, reminders, and guidelines. As electronic medical record systems have become more sophisticated, the rules and logic that can be applied have become easier to use and more widely adopted. In some cases, clinical decision support modules may be available to purchase or may be built into the electronic ordering system.

Electronic alerts may take many forms. Soft-stop alerts may offer the provider specific information about test limitations, frequencies, or associated reflex orders or suggest review of a test algorithm. Hard stops can completely block the order until further action is taken. The action required can be simply checking a box to override the stop or may require additional steps be completed. Some examples include the following.

- A once-in-a-lifetime test (e.g. genetic markers) may show existing results and require a pathologist approval before repeating.
- Specific genetic tests may require a consultation before the order is approved.
- Referred tests over a certain cost level may require pathologist approval.
- Orders to transfuse red blood cells may require additional documentation if the most recent hemoglobin level does not support the units ordered.

Test alerts are useful but overuse results in “pop-up fatigue” and clinicians may no longer focus on the message and may automatically override to complete the order. The most useful systems do not trigger a notification unless the clinician needs to take a specific action.

Some decision points do not lend themselves to the use of electronic alerts and rely more heavily on clinician education. An order for a frozen section review on a pathology specimen when the result will not affect immediate patient care is not easily detected by an electronic rule and may be more effectively managed by direct education from the pathologist.

Combined interventions using rules-based electronic alerts and education for all stakeholders that has support from the organizational leadership are most successful.

Building a Test Utilization Program

Developing a UM program can be challenging. Both the pathway and structure will vary tremendously between organizations. Each will be unique based on resources and needs.
The first step is to evaluate the resources and level of support available, then use that information to form a team or committee. Determine who needs to be at the table—is this a lab-driven program or a system committee? Is it being driven by a specific initiative in the lab or by an organization developing a formal infrastructure to optimize clinical decision support through a UM program?

**Internal Lab Teams**

Lab-specific teams are most effective when there is strong involvement from the medical director. Lab-driven teams may face challenges in changing behavior outside the lab but can successfully implement internal changes such as the following:

- Determine whether to bring tests in-house or send them out based on cost savings
- Provide pathologist consultation for complex or seldom ordered tests
- Require pathologist review and approval for specific esoteric tests (genetic or molecular are most often cited)
- Provide education related to tests that are frequently ordered inappropriately
- Drive mechanisms to collect required information for specific tests

**System Committees or Teams**

As well as laboratorians, these teams or committees utilize the expertise of clinicians and analysts from information technology, informatics, and finance. These experts can help collect and analyze data, research best practices, and evaluate both patient outcomes and financial implications if a change is made. The additional resources expand the scope, depth, and ease of obtaining information, allowing more time to focus on workflow solutions and support for changes. Physician partners may be the most critical members of the team when defining and guiding UM projects. Whether you work with hospitalists or bring in specialists for specific projects, including clinicians on the team is the key to a successful program.

System teams can be tasked with performing the same function as the lab team, but they generally have a broader scope and deeper resources. The success of a multidisciplinary team is, in part, driven by the buy-in and support generated by having key players at the table. If the lab generates changes in how tests are ordered without involving and educating clinicians, the entire project could be in jeopardy.

After assessing what resources are available, the UM team must identify areas of opportunity and prioritize projects. Projects may be driven by clinical, financial, or operational concerns. The team should
EDUCATIONAL COMMENTARY – TEST UTILIZATION MANAGEMENT (cont.)

rely both on internally generated data and research around best practices. Many teams use research to suggest where to begin their focus on gathering internal data.

Utilization programs, along with the results of specific changes, are readily available in current literature. Evidence-based recommendations have been developed by many medical specialty societies to provide guidelines to avoid unnecessary medical testing, specific to their area of expertise. The American Board of Internal Medicine Foundation has consolidated recommendations related to testing from 80 partners. Recommendations have been collated into a lab-specific set of guidelines called Choosing Wisely. These recommendations can provide suggestions for projects and provide supporting research and educational materials for clinicians and patients.

Many UM teams begin with tests referred to outside labs. These esoteric send-outs are expensive, and the financial impact is easy to track because the costs are captured separately from in-house testing. Reducing unnecessary testing can result in a direct cost savings or it may lead to a decision to bring the testing in-house.

Another starting point may be identifying which tests consistently require clinicians to ask questions or result in cancellation and reorder of tests. These tests may be candidates for best practice alerts, links to algorithms, or reflex test options. Understanding how inappropriate test orders occur is the first step in defining the change process.

After a plan is developed and the changes in workflow are ready for implementation, the process change must be clearly communicated to all stakeholders. Changing how a screen looks can be a significant roadblock if the clinicians using it are not aware of or do not support the change. This highlights the need to engage the clinicians—your end users—in both the planning and the implementation of any change. Change management is a key component of UM that is easily overlooked.

The final step for the UM team is monitoring or auditing outcomes to determine whether an intervention is successful, needs additional modification, or should be removed owing to unintended outcomes. Monitoring financial markers is often easier than tracking patient outcomes but both are needed to evaluate the efficacy of the project.

Conclusion

Laboratories and health care organizations can use test UM to increase the value of lab testing by improving patient outcomes and reducing costs. Utilization management programs and tactics vary widely and should be tailored to meet the needs of the local environment. Resources with evidence-based recommendations are readily available to help start or guide a test UM program.
EDUCATIONAL COMMENTARY – TEST UTILIZATION MANAGEMENT (cont.)

The economic impact of a UM program is easiest to document and has a significant impact on the lab budget. Unnecessary testing is not reimbursed, increasing the operational cost burden of the lab. It is imperative that laboratorians continue to invest time and resources in building strong relationships with physicians and other clinicians to maximize the impact to the quality of care for the health care system. The clinical impact of a successful UM program may be more significant downstream than in the lab but is much harder to document. Unnecessary testing contributes to “noise” in the health care system, affecting the time clinicians and support staff spend managing each patient but adding no value to patient care. A test that is not ordered when it is needed leads to delays in treatment, diagnosis, and management of a patient’s care. Both types of misutilization can contribute to long-term health issues and an increased need for health care over the lifetime of the patient.

References


© ASCP 2019