TODAY'S CLINICAL LAB

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The Hidden Value in the Clinical Lab

Laboratory data will play a starring role in healthcare's transition from sick care to well care

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Clinical laboratories are being impacted on multiple fronts by changes in healthcare reimbursement. Fee-for-service models are being replaced with value-based payment models and prospective bundled payment arrangements across all sectors in healthcare. Economic pressures are also being felt by laboratories with implementation of the Protecting Access to Medicare Act of 2014 (PAMA), which will cut reimbursement for some clinical diagnostic laboratory tests by 30 to 45 percent over the next five years. At the same time, preventive medicine, precision medicine, disease management strategies, and population health management are being explored as possible ways to reduce healthcare costs.

Laboratory professionals can use these catalysts to identify and develop new business strategies geared toward value-based healthcare. These strategies, which together make up a model known as Lab 2.0, aim to support the transition of the US healthcare system from sick care to well care by providing meaningful interpretation of the clinical laboratory data. By

delivering critical information in an actionable way, laboratorians can help optimize the diagnosis, treatment, and monitoring of patients while improving outcomes.

VALUE IN LABORATORY MEDICINE

How should the value of laboratory medicine in this new era be defined? Traditionally, it has been defined as accurate test results, rapid turnaround times, and cost efficiencies supported through automation. While these measures remain valuable and form the foundation of good laboratory medicine, they do little to reduce the total cost of patient care or support the movement to value-based healthcare.

By taking a few moments to identify your laboratory's strengths and core competencies, you can identify new ways to deliver value. Here are several examples of strengths found in all laboratories and ways to capitalize on them:

Actionable data: Most laboratories have a wealth of data but underutilize the strength of these data beyond the current episode of care. An example of how laboratory data can be transformed into actionable information would be to provide a longitudinal view of a patient's results relative to appropriate reference intervals. This long-term view of the patient's condition over the prior months or years, or across multiple episodes of care, can aid in diagnoses and early identification of disease progression. Labs that provide services to multiple healthcare entities could also combine data into a unified view to avoid duplicate testing and support data sharing. Visualizing data longitudinally could support precision medicine as an approach for disease treatment and prevention based on individual variability. By presenting data in these innovative ways, labs can fill voids that exist in the current healthcare environment. How might your lab provide actionable information to facilitate a clinical improvement for an individual or group of patients?

Clinical expertise: Laboratory medicine professionals— pathologists, doctoral scientists, and technologists— are excellent sources of information due to their unique training. Yet they may find themselves rarely engaging with clinical colleagues outside of the laboratory, where their expertise can be used to leverage larger health system problems. Building relationships outside the laboratory allows laboratory professionals to identify and understand key drivers of financial issues and patient satisfaction. For example, laboratorians regularly provide consultations to labs around test utilization and interpretation. That same clinical expertise could be used to support disease management programs or decision support tools involving costly conditions such as sepsis in the inpatient setting or diabetes in the outpatient setting. Do you know the key issues impacting costs in your organization?

Proximity: Laboratories are often physically located near patient care centers including hospitals and outpatient clinics. Capitalizing on this proximity, labs can support healthcare redesign and efficiency by reducing unneeded patient visits and improving timeliness of care. For example, laboratories could direct the appropriate use and selection of point of care (POC) testing to meet these objectives. In addition, POC test results could be included in the longitudinal clinical laboratory insights. For example, using POC tests for infections, such as presumed acute pharyngitis, can reduce unnecessary clinic visits, reduce prescription costs, and support patient engagement. All of these contribute to a lower total cost of care. Other examples include POC testing for chronic disease management. Conditions such as diabetes and chronic kidney disease require ongoing routine laboratory monitoring, which is often overlooked due to insufficient clinic staff or the need to focus on more pressing health conditions. Are you familiar with your facility's quality metrics for key patient care processes and how the laboratory can impact them?

HOW TO MEASURE VALUE

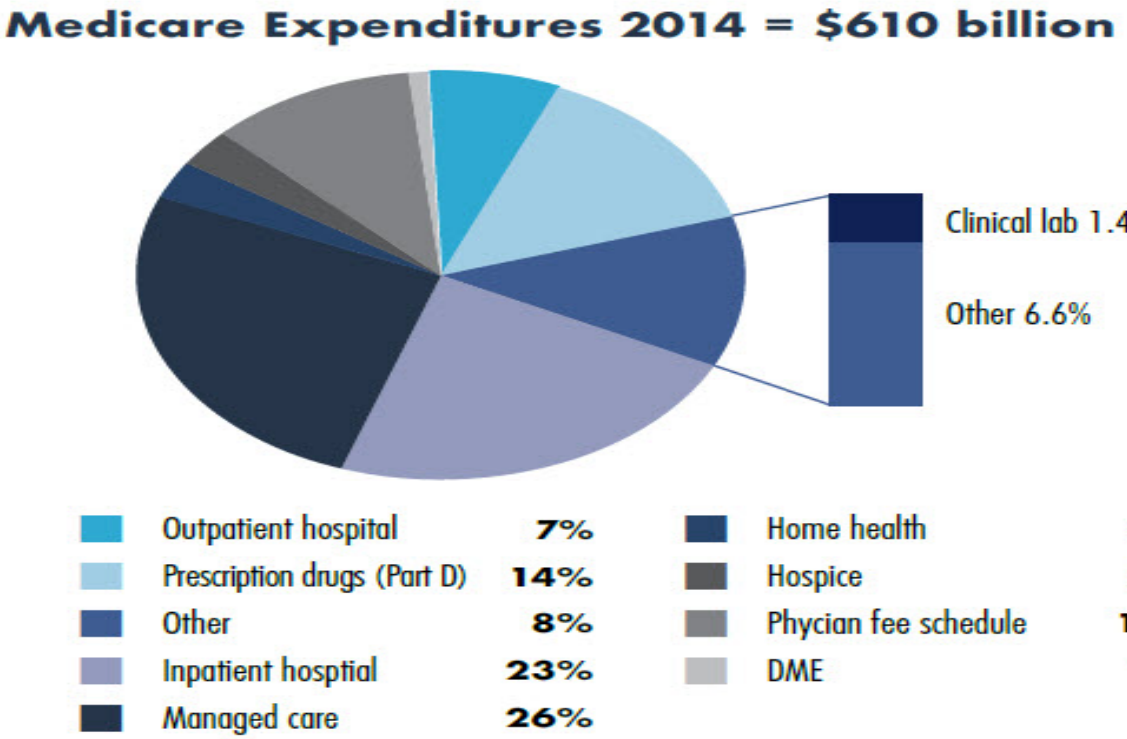


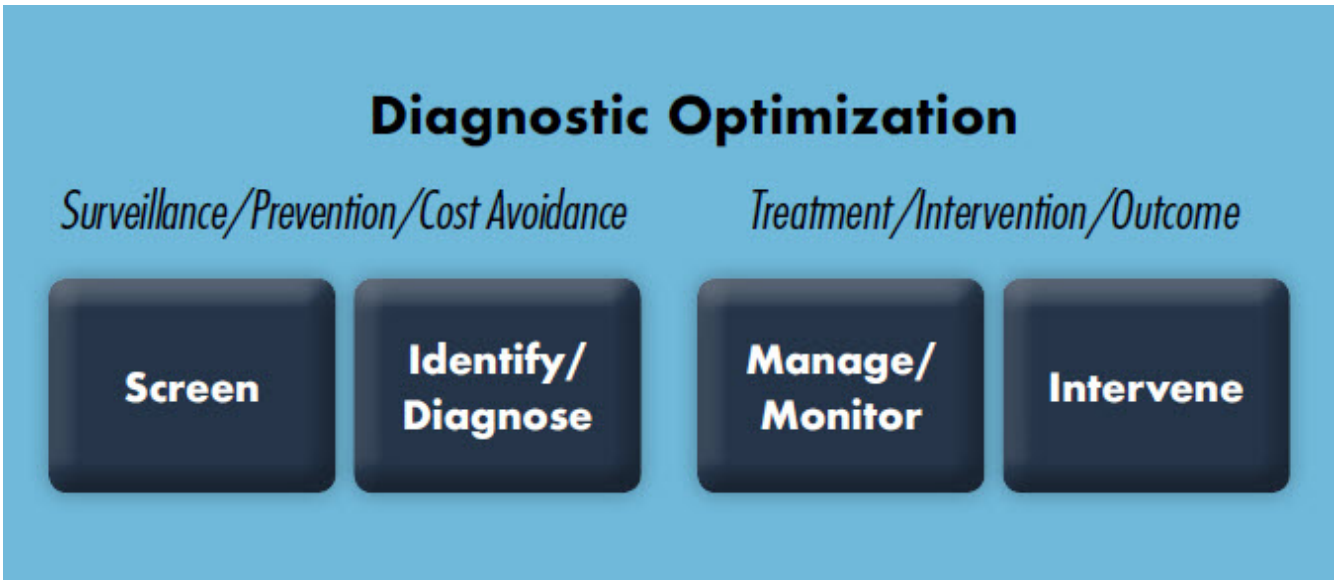
Figure 1: In 2014, clinical laboratory services contributed $8.3 billion to the total Medicare expenditures of $610 billion. This represented 17 percent of "other" expenses, or 1.4 percent of the total expenditures.

With value defined as reducing the total cost of care and improving patient processes or outcomes through the movement from sick care to well care, we can think about meaningful measures of value. Our initial inclination might be to focus on decreasing unnecessary

laboratory testing. Such efforts can reduce healthcare costs by producing a more effective diagnostic process, but overall, these initiatives result in small savings compared with the total healthcare expenditures. Labs can get caught in the strategy of reducing annual budgets by 2 to 3 percent annually and not focus on the larger opportunity with value-based care. Using data from 2014, which are the most recent available from Medicare, the laboratory accounts for less than 2 percent of the total healthcare expenditures. Therefore, the true objective of a value-based laboratory intervention should be to identify how the laboratory can contribute to reducing the remaining 97 percent of healthcare costs. For example, using data in Figure 1, a 10 percent savings in clinical laboratory expenses would result in only a small savings compared with a similar percentage reduction in pharmaceutical expenditures.

Laboratory data has the distinct advantage of providing real-time and longitudinal insights that can impact care. Measuring value across the entire spectrum of a disease or condition—including screening, diagnosis, management, monitoring, and clinical response post-intervention— should be part of a lab's approach. Many initiatives focus on a single intervention point rather than using a disease management strategy. By thinking in terms of disease management or population health, synergies can be created and value can be measured across multiple time points along a disease's spectrum or time line. Table 1 provides some examples of how value can be measured using laboratory data across the entire spectrum of a disease or condition.

PRACTICAL LESSONS LEARNED



A disease management approach provides the opportunity to identify opportunities along the entire spectrum of a disease, including screening, diagnosis, management, monitoring, and post-intervention.

As laboratory professionals become more involved in value-based healthcare, we can learn through collaboration and multidisciplinary experiences. Practical lessons we have learned at TriCore Reference Laboratories as a result of this journey include the involvement of key stakeholders, development and implementation of analytics tools, and documentation of success stories.

Key stakeholders: As previously mentioned, contacts outside the laboratory are essential to the success of any laboratory-driven program for value-based care. As a result of their current interactions across medical and surgical specialties, laboratories can leverage partnerships across these groups and become a hub for collaboration. Several potential stakeholder groups and the value that can be created through these relationships are identified in Table 2. We learned that stakeholders usually do not recognize the laboratory as anything other than a cost or profit center. As a result, it was not unusual for our efforts to be met with skepticism, but with repeated conversations, the lab's role in value-based care became clearer.

Area of Focus	Measure of Value	Example Using Laboratory Data
Disease/Condition Screening	Early recognition of chronic disease to slow or prevent disease progression	Create population health data to identify all pre-diabetic patients based on past laboratory results
Disease/Condition Diagnosis	Reduction in unnecessary medication use	Identify patients with suspected urinary tract infections or upper respiratory infections but negative cultures for discontinuation of prescribed antibiotics
Disease/Condition Monitoring and Management	Identification of gaps in care, unmet standards of practice, or quality measures	Track laboratory results for chronic disease management for patients with diabetes or chronic kidney disease
Disease/Condition Monitoring and Management	Data availability for care coordination or transitions in care	Individual patient profiles containing longitudinal laboratory results could be shared by practitioners in different healthcare settings and different EMRs to avoid duplicate testing
Disease/Condition Intervention	Identification of high-risk and/ or high-cost patients for enrollment in disease management programs	Monitor outpatient results for highrisk medications or adverse events in the elderly such as congestive heart failure or hypoglycemia with oral antidiabetic agents

Table 1: Examples of how value can be measured using laboratory data across the entire spectrum of a disease or condition.

Analytics: One of the most significant challenges when developing laboratory interventions to support value-based care is the need for analytics support. Laboratory information

systems (LISs) generally lack the ability to provide clinically meaningful analytics, though some organizations utilize tools within the existing LIS. Electronic medical records (EMRs) may collect patient health information but have failed to demonstrate improved patient care or lower costs. Organizations may also develop large data warehouses to provide analytics. These solutions are often not very flexible and rely on information technology personnel with no expertise in laboratory science to gather and interpret the information made available. Additionally, many current decision support tools, quality performance monitoring systems, and disease management interventions rely on claims data. Claims data is usually not available for 30 to 90 days after the treatment encounter and cannot provide a longitudinal progression of the patient's laboratory data. The development of improved analytics tools is a key opportunity for laboratories in value-based care.

Documenting success: Capturing data elements to measure improved care and decreased costs such as improvements in disease control and decreased hospital stays may require support from finance or other data groups within the institution. It is important when measuring value to adhere to the same scientific principles used in traditional research in order to show that the lab's intervention made a difference. Any successful story should be celebrated and communicated with those outside the laboratory.

Stakeholder	Value Created by Collaboration
Quality Management	Measure processes and outcomes based on laboratory results for Medicare, Medicaid, and health plan reimbursement without investment in time-consuming chart reviews.
Administration	Identify laboratory as a partner in value-driven initiatives that impact large segments of patients.
Risk Management	Implement risk reduction strategies with medication therapies and protocols in order to monitor clinical treatment decisions such as with hospital-acquired infections.
Infection Control	Identify patterns and trends in microbiology testing results in order to improve infection control procedures.
Pharmacy	Reduce inappropriate use of pharmaceuticals that can lead to drug resistance and associated expenses.
Providers/Physician Groups	Provide actionable data in easy-to-use formats at the point of care.

Table 2: Key stakeholder groups to consider when developing value-based initiatives using laboratory data.

Laboratorians are positioned to play a leadership role in value-based care by partnering with others in the organization and providing valuable clinical expertise for diseases and conditions that include laboratory testing. No matter how small, all opportunities to turn laboratory data into actionable clinical insights should be considered. Measuring value using

healthcare processes and patient outcomes should be documented in order to demonstrate the contributions of the laboratory and its impact on the total cost of care.

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