While clinical laboratory testing as a diagnostic tool continues to grow in influence and importance to the majority of medical decision making, ongoing changes in the health care industry are providing new challenges, including disruptive business models and technology, engaged and cost-conscious consumers, and changing payment models. With the nationwide movement toward value-based payment systems, health system clinical laboratories have an opportunity to shed the traditional volume-driven laboratory model and take the lead in demonstrating how appropriately leveraged diagnostics can improve patient outcomes and lower the overall cost of care. Making such a transition demonstrates value, and it is increasingly risky for a laboratory to function without doing so.

This third and final part of the article series provides a roadmap for transforming the laboratory from an inpatient-focused hospital entity to a community-focused outreach operation that provides service to physicians and patients, and brings additional volumes and revenues to the hospital or health care system.

**Defining Value**
In health care, the classic definition of value is a ratio of outcomes over cost.1 In reality, only the customer can truly define value; thus, the laboratory must create value in terms of the laboratory (and health system) customers’ benefit, and ensure customers and organizational leadership recognize and appreciate that value.

When optimizing health system performance, one of the best approaches to follow is the Institute for Healthcare Improvement’s Triple Aim model.2 The Triple Aim recommends that an organization characterize quality (ie, value) from the view of an individual member of a defined population. The model focuses simultaneously on improving the patient experience, lowering cost, and managing the health of the defined population (see FIGURE 1).

Up to 70% of the data residing on the electronic health record—data which are necessary for clinical diagnosis—are from the laboratory.3 Hence, in the effort to achieve the Triple Aim, the value of the community-based laboratory and outreach program must be acknowledged. Specifically, the laboratory delivers value by:

- Creating outpatient/outreach laboratory services that meet or exceed patient expectations, thereby increasing access and improving customer satisfaction
- Focusing on departmental efficiency (via Lean and other tools), creating cost-effective and affordable laboratory testing
- Developing testing protocols and algorithms to support appropriate utilization
- Providing a diagnostic testing service to deliver actionable data that can be used to improve patient outcomes
- Applying laboratory diagnostics across a population of patients to improve overall health

Achieving this high level of capability and delivering high-value service is no simple change; rather, it is a transformational process.

**A Value Roadmap**
A depiction of the journey to a value-added state is the Laboratory Value Pyramid (see FIGURE 2).4 By guiding the laboratory through four levels of activities, the Pyramid outlines a laboratory’s move from its current state to an ideal, value-added one.

Incorporating concepts of business and quality management systems, the pyramid is designed to help laboratories recognize
which systems and processes require improvement. By identifying a current state and then building upon it using basic improvement tools, a laboratory is able to achieve the next level, ultimately becoming best in class.

The first two levels are internally focused:

**Level 1, Achieve Normalcy and Predictability**, focuses on shifting the lab organization away from a system of inspection to one of prevention (see TABLE 1). It incorporates real time, visible performance metrics of lab processes along with traditional quality control data. Laboratories attempting to attain Level 1 must adopt the mindset of continuous improvement.

**Level 2, Establish and Meet Standards of Value**, begins by establishing criteria for value via benchmarking, which allows the laboratory to incorporate quality in results and in customer and employee satisfaction, and to implement best practices in production, supply chain, and finance. Laboratory leadership treats the department as a well-run business.

Levels three and four are externally focused:

**Level 3, Deliver Value that Exceeds Expectations**, focuses on shifting the mindset of the laboratory team from that of a service provider of lab results to a vital generator of clinical value. A laboratory outreach program plays a significant role in integrating testing across the continuum of care that exists within a health care system. Thus, the laboratory must transition from delivering commodity-level results to creating actionable data that affects costs and outcomes across the entire health care system.

A Level 3 laboratory applies knowledge of the core competencies obtained in Levels 1 and 2 to areas beyond the laboratory. Level 3 labs avoid reacting to customer demands and allowing other institutional departments to dictate service capabilities, particularly in the area of information management. Instead, the level 3 laboratory proactively creates value by integrating essential patient data and developing algorithms that provide accurate and timely diagnosis. This, in turn, contributes to shorter hospital stays, faster diagnostic evaluations, and reduced hospital readmissions within 30 days, thereby avoiding penalties.

**Level 4, Use Benchmarks to Achieve Best in Class**, ensures the laboratory’s practices and competencies are recognized as best in class by peer groups and third-party reviewers. It is achieved only by leveraging the attributes from the first three levels.

### Conclusion

Many of the challenges faced by outreach programs that were described in Parts 1 and 2 of this series are addressed as a laboratory moves toward the creation of value. Externally, these challenges take the form of demanding providers and price-sensitive payors and consumers. Internal challenges arise from the ongoing need to demonstrate the lab’s success to leadership, which impacts the ability to access adequate resources to support an effective outreach and information technology infrastructure. These challenges likely will always exist, as will uncertainty related to the impact of the Patient Protection and Affordable Care Act and the increasing need to prepare for, and respond to, value-based reimbursement models. Key considerations for managing these challenges include:

- A laboratory's risk; or ability to prepare for, and respond to, value-based reimbursement models.
- A laboratory's ability to access adequate resources to support an effective outreach and information technology infrastructure.
- A laboratory's success to leadership, which impacts the ability to access adequate resources.
- A laboratory's need to demonstrate the lab's success to leadership.

### TABLE 1

<table>
<thead>
<tr>
<th>Pyramid Goal</th>
<th>Outreach Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1: Achieve normalcy and predictability</td>
<td>Utilize existing laboratory capability</td>
</tr>
<tr>
<td>Level 2: Establish and meet standards of value</td>
<td>Refine and improve existing laboratory processes</td>
</tr>
<tr>
<td>Level 3: Deliver value that exceeds expectations</td>
<td>Extend services fully into the community served by the hospital or health care system</td>
</tr>
<tr>
<td>Level 4: Use benchmarks to achieve best in class</td>
<td>Establish outreach metrics that demonstrate program effectiveness</td>
</tr>
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</table>

### FIGURE 2

**The Laboratory Value Pyramid**

A laboratory that functions in isolation is a laboratory at risk; conversely, a laboratory that develops a mechanism for creating and communicating value is considered a health system asset.

A laboratory that is undifferentiated from its competitors is subject to a cost-sensitive market, whereas a differentiated laboratory service demonstrates diagnostic value beyond simply delivering test results.

A laboratory with a limited scope (ie, inpatient only) impacts a limited population. Conversely, a laboratory with a comprehensive outreach program impacts a broad and extended clientele.

A laboratory that demonstrates value via basic quality measures soon will be marginalized in the industry, while a laboratory that builds upon basic quality and establishes leading indicators will be recognized as an industry leader.

A laboratory that generates test results is a commodity, whereas a laboratory that can integrate its diagnostic data into the complete patient care encounter has the ability to impact the total cost of care and improve patient outcomes.

By following a defined path to improvement and value, a laboratory can achieve best-in-class status and gain the respect of its institution and peers. When a laboratory focuses on achieving the Triple Aim, it contributes to patient satisfaction by delivering cost-effective service and provides necessary diagnostic data to improve the management of population health. As such, the laboratory matures, moving well beyond creating a report that resides in a patient’s medical record. The laboratory, through its outreach program, becomes the mechanism by which valuable diagnostic data are generated, delivered, integrated, and applied to improve the health of all of the patients it serves.

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