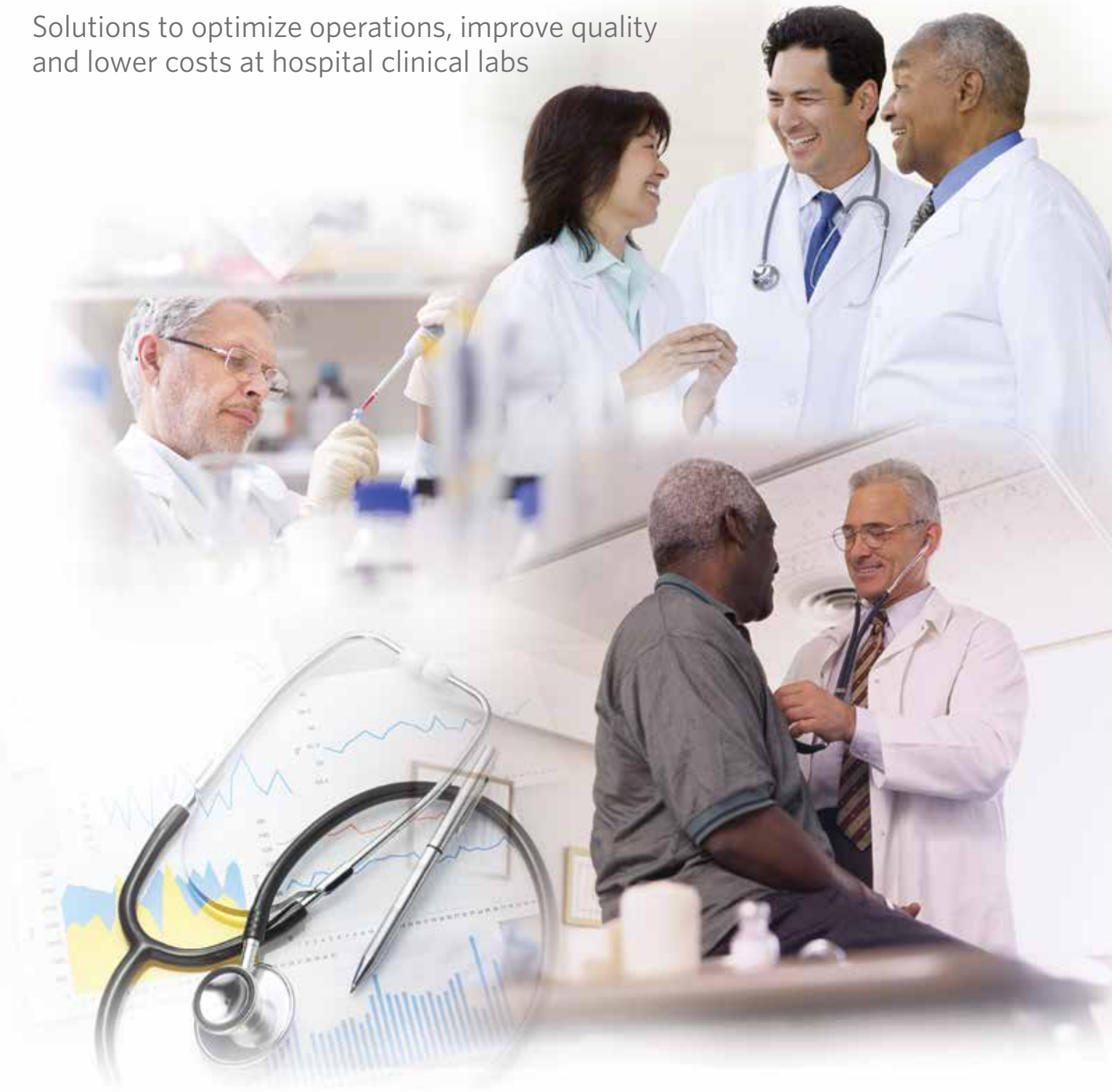


# 70% of medical decisions are based on lab results

Solutions to optimize operations, improve quality  
and lower costs at hospital clinical labs



# Health care in the United States includes a vast array of complex interrelationships among those who receive, provide and finance care.



U.S. health care employs 13% of the workforce and has expenditures of approximately \$3 trillion or 18% of gross domestic product (GDP).<sup>1,2</sup>

Due to the economic challenges, the rising cost of health care is a major issue for patients, employers, providers and payers. The desire to reduce cost and increase quality is forcing health care to move from a fee-for-service to value-based outcome model, where payments will be constrained and subjected to increased transparency. The culmination of all these changes is having an adverse impact on the bottom line of many hospitals and health systems across the country. Given the pressure resulting from declining reimbursements, reducing

costs and eliminating redundancies are the top priorities for hospitals and health systems. Within the hospital, clinical labs are being impacted on two fronts. On the inpatient side, Medicare payment pressures are forcing labs to cut expenses. On the outpatient side, clinical labs are confronting fee schedule reductions, a new bundled payment system and uncertainty about Medicare reimbursement rates.<sup>3</sup>

Laboratory testing plays a crucial role in the detection, diagnosis and treatment of disease in patients. An estimated 70% of all decisions regarding a patient's diagnosis and treatment, hospital admission and discharge are based on laboratory test results. As health care reform focuses on diagnosis and early intervention, timely and accurate lab results are necessary for the quality of patient care and for managing downstream costs.

Therefore, ongoing investment in the hospital laboratory is crucial as it allows:

1. **Quality of testing**
2. **Operational efficiencies**
3. **Access to the latest diagnostics testing and services**
4. **Patient safety**

In order to demonstrate value from their labs, and remain profitable, hospitals are partnering with national clinical laboratories which can drive operational efficiencies and cost savings. National laboratories like Quest Diagnostics offer solutions ranging from reducing costs through laboratory management to enabling deeper clinical capabilities through analysis and management of test utilization.



## Reducing Costs Through Hospital Laboratory Management

Although some larger systems have modernized their laboratory operations and built centralized core-labs, the majority of hospitals and hospital systems nationwide are still not operating at optimum capacity and output. Quest Diagnostics offers hospitals laboratory management solutions that are designed to lower cost, reduce capital investment, improve operational efficiencies and deliver quality patient care and service (Table 1).

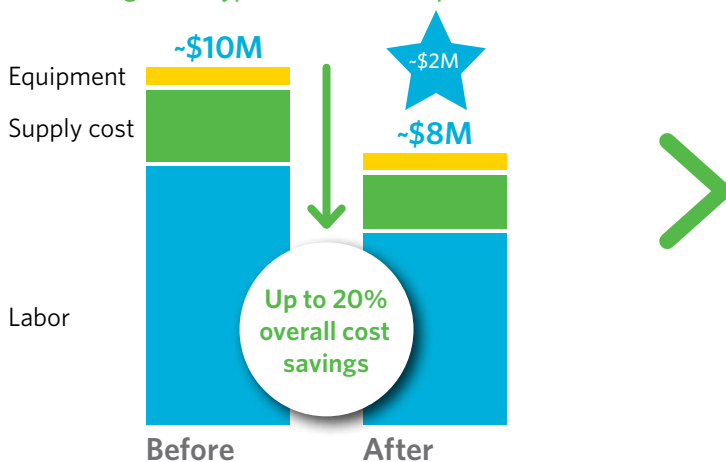
Today, hospitals spend on average 3-4% of their net patient revenue on clinical laboratory services. For mid-size 300-500 bed hospitals with annual net patient revenue of approximately \$300 million, contracting with a national diagnostic testing laboratory could reduce the laboratory spend up to 20% or \$2 million annually (Figure 1). However, as the scale and scope of the operation increases, as in the case of larger hospital systems, greater savings could be realized annually.

Table 1: **How hospitals can benefit from working with national clinical laboratories**

Problem	Solution
High costs due to limited purchasing scale economies and fluctuating testing volumes	Cost reduction by benefiting from large purchasing scale economies and moving testing from a variable cost to fixed cost
Periodic investment needed for latest equipment upkeep and purchases	Purchasing of laboratory equipment managed by Quest Diagnostics, thereby providing hospital with access to the most sophisticated and latest testing capabilities. This also liberates capital which can be invested elsewhere
Subpar operational efficiencies due to lack of standardized processes	Improved laboratory operational efficiencies, such as reducing lab real estate footprint thereby reclaiming valuable space which can be allocated elsewhere
Limited quality tracking and improvement metrics	Advanced quality measurement, analysis and tracking metrics through implementation of clinical lab best practices at the hospital lab
Staffing shortages of skilled technicians, phlebotomists and medical directors	Lab employees managed and employed by Quest Diagnostics
Inability to effectively and accurately report due to fragmented and uncoordinated IT systems	Access to advanced connectivity solutions and data driven diagnostic insights

Figure 1: **Cost savings through laboratory management**

Cost savings for a typical 400 bed hospital



How will this be realized?

- Leverage purchasing economies
- Eliminate future CapEx
- Reduce administrative support costs
- Optimize site testing location
- Free up physical space
- Increase productivity

## Eliminating Redundancies Through Network Optimization

The last few years have seen an increase in the number of mergers and acquisitions of hospitals and hospital systems. High levels of consolidation activity are likely to continue, driven by the need to integrate clinically, manage costs and prepare for the shift from volume to value-based reimbursement.<sup>4</sup> However, when hospitals consolidate they introduce redundancies and subpar operational efficiencies due to lack of standardized processes. By working with national laboratories such as Quest Diagnostics to manage and optimize their lab testing network, hospital systems can address these redundancies, reduce costs and continue to deliver high quality patient care, as shown in Table 2.



Table 2: **How hospitals can benefit by optimizing laboratory operations**

Problem	Benefit from a Clinical Lab Partner
Multiple testing sites	Consolidation of testing sites based on key business factors such as logistical complexity, potential savings, turnaround times, purchasing costs and ease of implementation Frees up valuable real estate which can be used elsewhere
Duplicated services	Optimization of operations ensures streamlining and eliminates duplication of services
Subpar test volumes	Consolidation allows for testing volume to be driven to fewer hospital labs
Ad hoc test menu	Standardized and latest test menu available throughout the hospital network, thus allowing better, more effective coordination of patient care
Quality and service issues	Best practice sharing and introduction of advanced quality metrics measurement, analysis and tracking Leaner workflow and automation can result in quicker test result turnaround time which can reduce length of stay and improve physician and patient satisfaction

## Generating Revenue Through Laboratory Outreach

The past decade has seen steady growth in the number of hospital laboratory outreach programs serving office-based physicians in surrounding communities. Under these outreach programs, hospitals utilize excess lab capacity and generate revenue by providing testing services to community physicians.

Large national laboratories, such as Quest Diagnostics, can help hospital outreach programs achieve a competitive advantage by helping them understand the disease characteristics of the market, help coordinate care of desired outcomes and ensure compliance with guidelines.

Outreach partnership programs typically constitute:

1. Analysis of market data to provide diagnostic insights
2. Hospital Laboratory Workflow Assessment
3. Phlebotomy Services
4. Physician Office IT Connectivity
5. Logistics

Additionally, a laboratory management arrangement, which is designed to improve efficiencies and reduce lab costs, could generate a better margin on outreach services.

## Reducing Hospital Acquired Infections

In a report, "Antibiotic Resistance Threats in the United States, 2013", the CDC highlights that at least 2 million people become infected each year with antibiotic-resistant bacteria, and at least 23,000 people die annually as a direct result of these infections, which increase hospitalizations and extended hospital stays, adding considerable and avoidable costs to the health care system.

In an effort to reduce these costs, hospitals no longer receive additional payment for cases in which certain conditions were not present on admission. Also, beginning 2015, hospitals scoring in the bottom quartile for the rate of hospital acquired conditions (i.e., those with the poorest performance) will have their Medicare inpatient payments reduced an additional one percent<sup>5,6</sup>

To mitigate the financial risk introduced by hospital acquired conditions, health care leaders are turning to national clinical laboratories such as Quest Diagnostics that offer solutions ranging from inbound patient screening to empirical treatment of multidrug resistant organisms.

**Surveillance testing** which is performed at admission allows hospitals to screen inbound patients for infections present on admission and helps early detection of multidrug-resistant organisms (MDROs).

### Features

- Early detection and identification of infections
- Early detection of colonization with MDROs
- Precautionary isolation and treatment of patients

### Benefits

1. Helps hospitals control their infection levels
2. Improves patient care outcomes
3. Helps prevent other patients from being infected
4. Allows hospitals to maintain reputation within the community

**Antimicrobial susceptibility testing**, a program aimed at reducing hospital acquired infections is performed during diagnosis and treatment of hospital patients and enables specific treatment of multidrug-resistant organisms.

### Features

- Provides institution-specific antibiogram reports
- Aids in the empirical treatment of infections
- Monitors antimicrobial resistance

### Benefits

1. Helps reduce hospital acquired infections caused by resistant organisms
2. Allows hospitals to avoid longer inpatient stays and/or readmissions
3. Lower the cost of patient care and financial burden to hospitals
4. Helps reduce the cost of antimicrobial therapy

## Analyzing and Managing Test Utilization



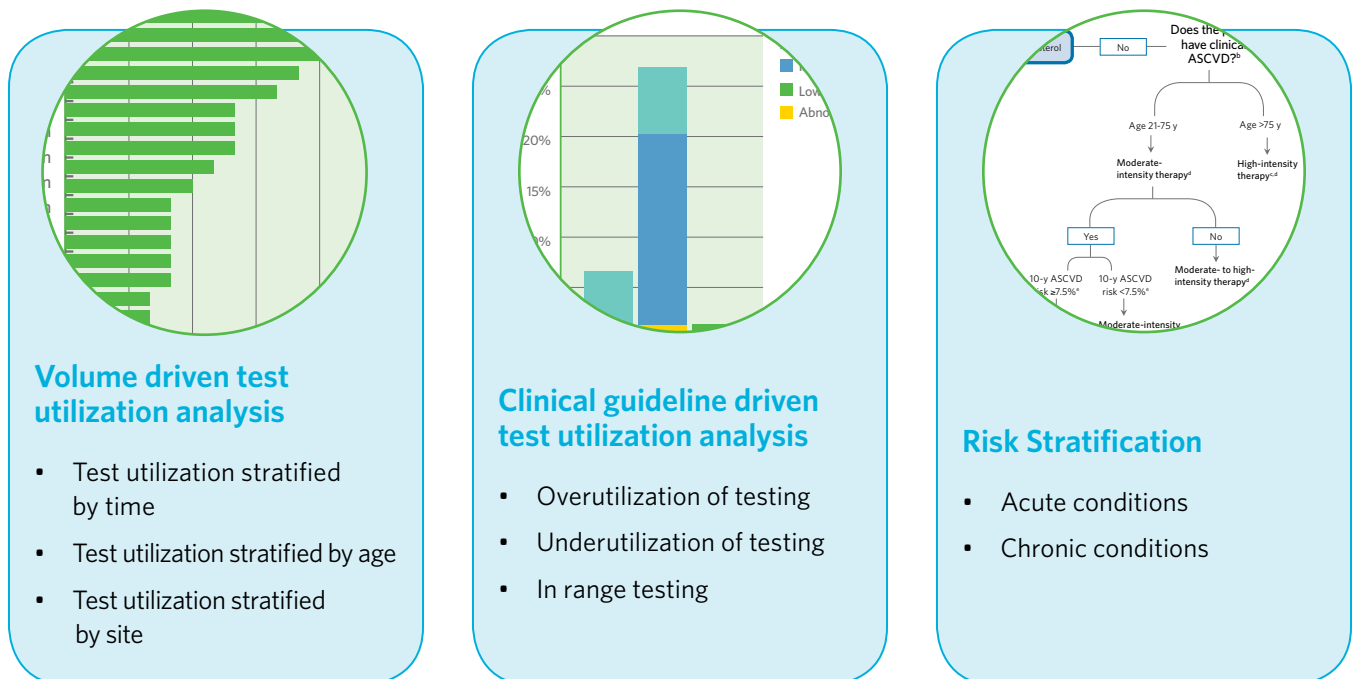
As Medicare and other payers increasingly target overutilization as a way to curb costs, the evaluation of the medical necessity, appropriateness and efficiency of the use of health care services has entered the realm of laboratory testing.

National clinical laboratories like Quest Diagnostics are offering hospitals solutions such as test utilization analysis and the ability to identify at-risk patients for early and appropriate intervention, as part of population health management.

Data mining and diagnostic insights are at the heart of a successful utilization management program, which typically constitutes:

1. Data extraction from LIS
2. Data stratification & analysis to determine utilization patterns
3. Guideline driven education & monitoring of testing algorithms & reflex testing
4. Migrating to best practices and implementing continuous improvement and reporting initiatives

Figure 3: Test utilization analysis and management solutions from Quest Diagnostics



## Conclusion

Declining reimbursements and changing delivery models continue to have an adverse effect on the revenue and profitability of hospitals across the country. In addition to the financial burden, health care institutions must also focus on optimizing their health system performance by:

1. **Improving the patient experience of care (including quality and satisfaction)**
2. **Improving population health**
3. **Reducing the per capita cost of health care**

Given that 70% of medical decisions are based on lab results, delivering quality and cost-effective patient care is critical. Therefore, hospitals and health systems across the country are working together with national clinical laboratories like Quest Diagnostics to manage their hospital labs. By implementing best practices and providing diagnostic insights within a hospital lab, Quest Diagnostics can not only help hospitals reduce laboratory costs, but also help reduce downstream costs through proper analysis and management of patient testing.



With population health management growing, hospital outreach programs are leveraging the diagnostic insights of their labs to understand and treat the disease characteristic of their communities.

Ultimately, finding the right synergistic clinical laboratory like Quest Diagnostics can help health care institutions successfully work towards improving patient experience, reducing the cost of care and driving profitability.

## References:

1. [www.data.worldbank.org](http://www.data.worldbank.org); World Development Indicators; 2014
2. Health Care Employment Projections: An Analysis of Bureau of Labor Statistics Occupational Projections 2010-2020; March 2012
3. [www.hhnmag.com](http://www.hhnmag.com); Article; Hospitals & Health Networks; Clinical Management: Hospital Labs go under the microscope; May 2014
4. Becker's Hospital Review; Report: 3 Key Health care Merger and Acquisition Trends; November 21, 2013
5. [www.cms.gov](http://www.cms.gov); Press release: CMS Issues Proposed Hospital Inpatient Payment Regulation; April 30, 2014
6. Health care Cost and Utilization Project; Statistical Brief # 172; Conditions with the largest number of adult hospital readmissions by payer, 2011; April 2014

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