

Standardizing Microbiology Workflows Across a Large Health System

Case Study

BACKGROUND

The two core laboratories supported system-wide microbiology testing but operated with different instrumentation and workflow models. One laboratory used **MicroScan for ID/AST**, while the other used **bioMérieux solutions** (BACT/ALERT®, VITEK® MS, VITEK® 2) with prior workflow optimization implemented through Lab Optimization Consultancy.

This resulted in:

- Variability in workflow execution
- Differences in turnaround time performance
- Inconsistent operational practices across sites

The organization partnered with bioMérieux Lab Optimization Consultancy to better understand these differences and evaluate opportunities for standardization.

OBJECTIVES

The goal was to identify opportunities to standardize microbiology workflows across the health system and to support development of a consistent blood culture and ID/AST operating model.

OVERVIEW

A large Midwestern health system with two core microbiology laboratories evaluated how differences in instrumentation and workflow models were impacting performance across the system.

Through a structured workflow assessment, the organization identified a path to standardize operations, improve turnaround time, and align on a single microbiology strategy.

APPROACH

bioMérieux Lab Optimization Consultancy worked with the microbiology teams to perform a comparative assessment of both laboratories, evaluating:



Turnaround time performance for blood and urine cultures



Workflow process steps and specimen flow across key microbiology activities



Staffing alignment relative to workload patterns



Operational differences associated with instrumentation and workflow models

KEY FINDINGS

The assessment identified measurable differences in performance. The laboratory utilizing bioMérieux solutions demonstrated faster turnaround times for urine and blood cultures. (See Figure)

These differences were associated with prior workflow optimization efforts implemented through Lab Optimization Consultancy within the laboratory utilizing bioMérieux solutions, resulting in:

- A more continuous workflow model, including reduced batching and more frequent processing of cultures, contributing to improved efficiency
- Improved alignment of staffing schedules and shift responsibilities with workload patterns

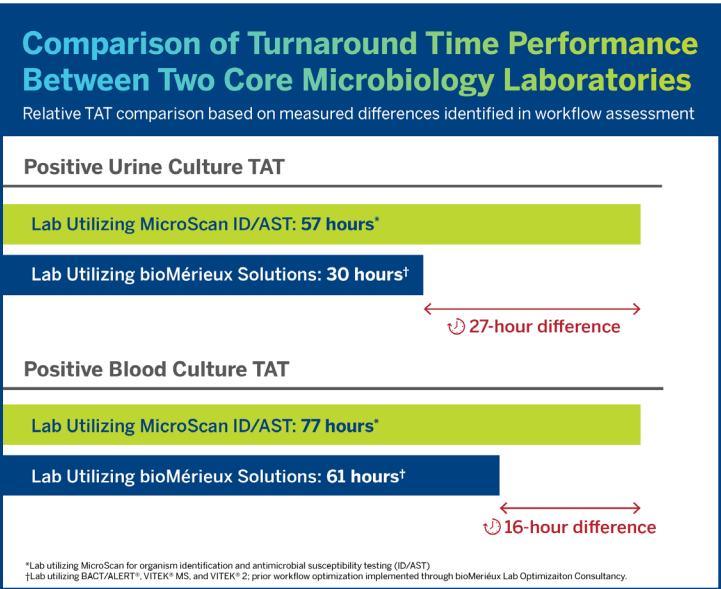


Figure: Comparison of positive urine and blood culture turnaround times between a laboratory utilizing MicroScan ID/AST and a laboratory utilizing bioMérieux solutions with previously implemented workflow optimization.

RECOMMENDED PATH FORWARD

Based on these findings, several recommendations were identified to support workflow standardization and improved performance.

- Standardize ID/AST workflows by transitioning from **MicroScan to VITEK® 2**
- Expand use of **VITEK® MS for bacterial identification**
- Standardize blood culture workflows across both laboratories
- Optimize staffing to match workload patterns
- Redesign workflows to reduce batching and support more consistent processing across shifts
- Evaluate a centralized model using **BACT/ALERT® VIRTUO®, VITEK MS, VITEK 2, and BIOFIRE® FILMARRAY® TORCH**

OUTCOME

Based on the assessment, the organization selected bioMérieux as part of its future-state microbiology strategy, including standardized instrumentation and a more centralized approach to blood culture processing.

This approach enabled the health system to move toward improved consistency, reduced variability, and faster turnaround times across both laboratories.

SUMMARY

This case study demonstrates how differences in instrumentation and workflow models can drive meaningful variation in microbiology performance.

By comparing two operating models within the same health system, the organization was able to quantify differences in turnaround time and identify the operational impact of standardized workflow design and integrated microbiology instrumentation.

These findings support a clear path toward standardization, enabling improved turnaround time, reduced variability, and more aligned system-wide microbiology operations.

1. Based on internal studies conducted by bioMérieux. On file at bioMérieux, Inc.