

Case Study:

Improving efficiency and patient care with HemoCell™ Specialized Lab Automation



University Medical Center Lubbock, Texas, US

This case study highlights the impact of **HemoCell Specialized Lab Automation** in the clinical laboratory at University Medical Center (UMC) in Lubbock, Texas. By reducing the number of manual steps required to automate Hemostasis testing, the lab realized a significant reduction in staff time, enhancing efficiency and allowing staff to focus on other tasks. In addition, HemoCell enabled the lab to expand its hospital test menu, decreasing turnaround time and positively impacting patient management. And, with Werfen's post-implementation support, including Health Check, UMC was able improve their efficiency even further.

Addressing an increase in lab testing demand

UMC, a 500-bed facility, is the only Level 1 trauma center in Northwest Texas. The UMC laboratory performs approximately 4,000 tests daily.

The challenge: increase testing to support increased volume

As UMC increased the number of its licensed beds and made plans to expand its cancer center, the lab was renovated to prepare for greater testing demand. While the implementation of a Total Laboratory Automation (TLA) system helped increase capacity, it was not enough to help the lab meet its goals.

UMC's Hemostasis testing goals included:

- 1 Consistently deliver 30-minute turnaround time (TAT) for STAT testing
- 2 Minimize variation in time to result through reduction of standard deviation (SD)
- 3 Improve autovalidation rates
- 4 Reduce number of calls for results

The solution: HemoCell Specialized Lab Automation

The UMC lab implemented HemoCell Specialized Lab Automation, a customizable workcell, to automate Hemostasis testing, streamline the process, and meet increasing demand for testing.

The results: eliminating manual steps for a streamlined process

Previously, samples were received in processing, then loaded onto the TLA system. Technologists retrieved samples from the outlet to spin in stand-alone centrifuges and then transferred them to racks on their ACL TOP® Family 50 Series systems. The implementation of HemoCell eliminated preanalytical sample preparation steps, reducing potential delays and freeing up technologists to focus on value-added activities.

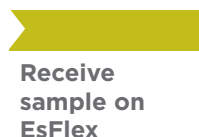
Before HemoCell

Seven-step process for Hemostasis testing



After HemoCell

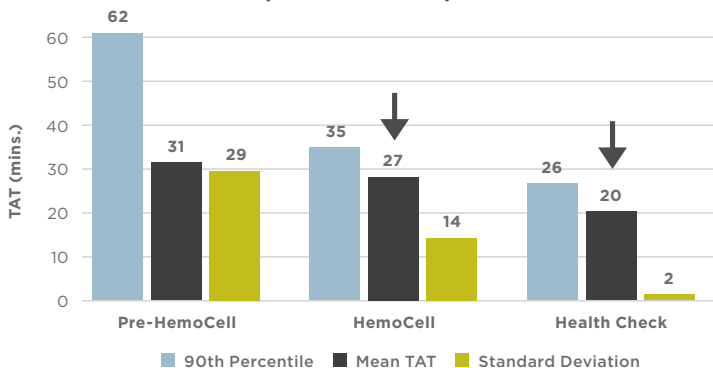
Only one manual step, post-HemoCell implementation



Key performance indicators (KPI)

To ensure continuous quality improvement, months after HemoCell was implemented, Werfen performed a Health Check, a systematic review of workflow and KPI data, to identify areas of potential improvement based on the lab's pre-installation goals. This allowed UMC to improve their KPIs even further.

Impact on lab operations



↓ **58%** 90th percentile sample completion time

Pre-HemoCell: 62 minutes → HemoCell: 35 minutes → Health Check: 26 minutes

↓ **93%** TAT SD

Pre-HemoCell: 29 minutes → HemoCell: 14 minutes → Health Check: 2 minutes

↓ **35%** mean TAT

Pre-HemoCell: 31 minutes → HemoCell: 27 minutes → Health Check: 20 minutes

↑ **7%** routine autovalidation

Pre-HemoCell: 92% → HemoCell: 99% → Health Check: 99%

“By automating preanalytical steps with HemoCell, the lab staff spends less hands-on time with samples and has more time for other tasks.”

— Jayton Zachary, MLS (ASCP),
Clinical Laboratory Assistant
Director, UMC Health System

Enhanced economic impact, patient care, and employee satisfaction

Prior to HemoCell, technologists spent over a thousand hours per year on preanalytical sample preparation. With HemoCell, this time was reallocated to other activities in the lab, including bringing additional specialty testing in-house, which saved costs. With an expanded test menu, UMC has significantly decreased TAT, leading to a potential reduction in time to diagnosis and treatment. In addition, the lab's more efficient workflow has led to record employee engagement, in the 99th percentile.

↓ **67%** cost reduction due to more specialty testing in-house

🕒 **1,711** hours reallocated to other value-added activities

Conclusion: quality and efficiency in Hemostasis testing

Implementing HemoCell Specialized Lab Automation has enabled the UMC lab to address the increased demand in testing volume. In addition, the lab achieved its goals of improved KPIs. Plus, because significant time has been saved, the lab staff can focus on value-added activities to ensure and enhance quality care and efficiency, as well as staff satisfaction. And with the addition of a Health Check, Werfen helped UMC further improve their efficiency.

“Werfen’s team is exceptional, providing ongoing communication, service, and expertise. With their post-installation support, including the Health Check, we’ve taken our performance to the next level, further improving our TAT standard deviation to enable faster and enhanced patient care.”

—Jayton Zachary



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