



The Power of Process™ in Action

New Laboratory Solution Helps Memorial Medical Center Achieve Dramatic Workstation Consolidation

Laboratory Profile

- Memorial Medical Center, Springfield, IL
- 570-bed hospital
- Operates 24 hours a day
- 1.586 million billable test per year
- Equipped with one SYNCHRON LX®4201 Clinical System; three Access® Immunoassay Analyzers; two DataLink™ Data Managers; one Power Processor system with CHEMExpress Upgrade

Before Beckman Coulter was a household name within the laboratory at Memorial Medical Center in Springfield (Ill.), the lab was generally characterized by segregated workstations, a multitude of manual processes and a fair share of inefficiencies.

Today, however, thanks to an innovative lab solution from Beckman Coulter, the laboratory has transformed and streamlined the testing process in a way that would make any hospital administration proud.

Situation Overview

Before his laboratory acquired Beckman Coulter instrumentation, Doug Stevens, Lab Director, paints a picture of a testing process that was in serious need of improvement.

“We had a significant number of instruments in the Chemistry area, a lot of labor-intensive processes and a lot of criss-crossing workflow patterns throughout the lab – factors that decreased our efficiency and overall effectiveness,” says Stevens.

Not only did the laboratory have a keen interest in consolidating its many workstations, it was also facing pressure to become more cost-effective during a time when its test volume was on the rise.

According to Stevens, the laboratory’s test volume usually increased about 5 percent each year. During the past 18 months, however, the laboratory’s test volume increased nearly 15 percent; jumping from 1.381 million to 1.586

million billable tests per year. Stevens attributes the growth to increased outside client business.

Memorial Medical Center wanted a new product platform and pre-analytical automation to help the laboratory improve its processes and become more competitive.

Creating the Right Solution

While striving for good pricing and a wide chemistry menu were factors in the decision-making process, the lab’s single biggest deciding factor was its ability to achieve workstation consolidation.

Laboratory Goals

- Achieve workstation consolidation
- Become more cost-effective
- Implement pre-analytical automation
- Improve post-analytical processes

Laboratory Results

- Eliminated 38 percent of analytical systems
- Increased test volume by nearly 15 percent with fewer staff
- Turnaround time decreased, routine and STAT tests processed equally fast
- Reduced errors; 60 percent of test results released automatically

That consolidation was found with Beckman Coulter and a product combination that included two SYNCHRON LX®20 systems (LX®4201), one Power Processor system, three Access® immunoassay systems, two DataLink™ data managers and the CHEMExpress connection that integrated the LX20 systems into the automation line.

"No other instrument on the market could come close to delivering chemistry testing at the speed of the LX20," says Stevens. "No other company that I am aware of can deliver a basic metabolic panel in under one minute. And Beckman Coulter was the only company that offered the level of automation connectivity and the front end processing as part of the solution."

Putting the Pieces in Place

Before installing its new instruments, Memorial Medical Center laboratory completely rebuilt its 26,000-square-foot workspace. Many small sections spread throughout the lab

were replaced by a large core structure, except for developmental and immunoassay testing, toxicology and microbiology.

Today, the rebuilt laboratory is fully operational and has a much more efficient testing workflow. Routine general chemistry testing is fully automated – from front-end sample processing and instrument loading all the way through post-analytical sorting and storage.

Pre-analytical automation also eliminates front-end sample handling for immunochemistry tests. The sample tubes are loaded into Access instrument racks — saving valuable time.

Automation has also decreased turnaround time. According to Stevens, routine tests and STATs are now equally fast. He says, "Most tests ordered are completed within our standard automation run."

"We have been extremely satisfied with the LX20's", he says, "And the Power Processor has proven to be a very efficient solution."

Remarkable Results

Reducing its immunochemistry analyzers from nine to six and its chemistry analyzers from four to two, Memorial Medical Center achieved a whole new level of workstation consolidation – and a dramatic 38 percent reduction of lab instrumentation.

"Eliminating workstations in our lab has been the biggest benefit of our new Beckman Coulter solution," says Stevens. "Plus, the effective monitoring of results and the technologists' ability to review results utilizing the DataLink have been exceptional."

Thanks to the DataLink, the laboratory has improved its post-analytical processes and reduced errors associated with manual ordering and review processes. Today, at least 60 percent of Memorial Medical Center test results are automatically released by DataLink's review-by-exception feature. DataLink also provides automatic delta checking, reflex testing and STAT notification. These automated features boost overall lab productivity by helping manage the flow of information and enabling members of the staff to perform other duties.

Future Plans

Stevens says the department eventually plans to connect their immunoassay analyzers to the Power Processor automation system, then look at a possible integrated connection for hematology.

While the post-analytical process has already been improved dramatically with DataLink, departmental staff may also look into additional areas for improvement, such as the addition of a third LX20 and off-line storage of sample tubes. The laboratory is also evaluating the selection of tests available on the LX20 systems to further maximize STAT throughput.

"I believe we have capitalized on a very good product solution and significantly expanded our capabilities," says Stevens. "Since we've implemented this new lab solution, we've actually reduced our staff while increasing our test volume by nearly 15 percent."

"Beckman Coulter has provided us with the level of automation that we discussed, and their predictions for cost-saving and process efficiency have been achieved," he says. "Overall, we've been very satisfied with the Beckman Coulter solution."

"I believe we have capitalized on a very good product solution and significantly expanded our capabilities; ... we've actually reduced our staff while increasing our test volume by nearly 15 percent."

