

Labs' Search for New Efficiencies Yields a Space-Saving Solution

Laboratory Profile

- **Medisch Centrum Alkmaar**
Netherlands
- **900 beds**
- **126 lab workers, many of them part-time (equivalent to 99 full-time employees)**
- **Two labs, one in hospital and one nearby**
- **Labs operate 24 hours a day**
- **Perform more than 1 million tests annually**
- **Lab equipment includes one SYNCHRON LX®i 725 and two SYNCHRON LX®20 PRO Clinical Systems**

Situation

As a teaching hospital with a clear focus on research and innovation, Medisch Centrum Alkmaar hospital needed to improve the productivity of its labs to prepare for future growth and consolidation. Menu limitations required the hospital to run several systems in its labs to perform all its necessary testing. This configuration led to productivity problems, especially during peak hours. "Since implementing Beckman Coulter's SYNCHRON LX®i 725 and SYNCHRON LX®20 PRO Clinical systems, we have benefited from more efficient and transparent lab processes," says Dr. F.P.W. Tegelaers, a clinical chemist and member of the staff that supervises the delivery of lab services. "It's clear the solution Beckman Coulter implemented for us will benefit us now and in the future."

A Solution, Not Just a Piece of Equipment

The in-hospital lab at Medisch Centrum Alkmaar in the Netherlands has such limited space that sometimes it's difficult for all the necessary technicians to work at once. But that's not the only reason Beckman Coulter instruments were a perfect fit. The SYNCHRON® systems are compact and the liquid reagents are easy to use, "and that makes things simple for the lab techs," says Tegelaers,

More importantly, Dr. Tegelaers says, "They weren't selling us an apparatus. They were selling ideas and solutions to allow us to work more efficiently."

Laboratory Goals	Laboratory Results
<ul style="list-style-type: none"> • Faster turnaround time • Consolidate workstations; reduce number of tubes required • Improve lab processes • Meet increased workload without adding staff 	<ul style="list-style-type: none"> • Improved TAT, especially during peak hours • Achieved simultaneous chemistry and immunoassay testing; • Consolidated other routine testing onto fewer platforms; • Decreased tubes by 40 percent, saving 12,000 euros a year • Eliminated stress and redundancy of manual tasks and improved lab efficiency • Reduced staffing requirements by 25 percent, compared to the former chemistry configuration

The need for more efficient lab processes is what prompted MC Alkmaar to acquire the new Beckman Coulter systems for its main lab, housed in a building about 500 meters from the hospital, and for its much smaller in-house lab. The hospital had been using several systems from two different manufacturers to run all of its assays.

The two labs combine to serve a 900-bed teaching hospital in northern Holland, while the outside lab also meets the needs of general practitioners and other physicians performing outpatient procedures.



Identifying Needs

The lab's workload has grown to more than 1 million tests a year. Even with additional technicians they still struggled to maintain throughput and turnaround times, especially during peak afternoon hours.



Dr. F.P.W. Tegelaers and staff are pleased with their new instruments. "The technicians can focus on results and eliminate the stress and redundancy of manual tasks."

In addition to compact design and efficient processes, the laboratory staff wanted:

- Identical systems at both lab locations, to make it easier to merge the facilities sometime in the future.
- To meet STAT requirements of the ICU and dialysis department.
- Integration of chemistry and immunochemistry, especially for tests required 24 hours a day.
- Easy-to-learn and easy-to-use systems, since the lab employs many part-time technicians.

The hospital found what it was looking for in the SYNCHRON LXI 725 and LX20 PRO systems.

"We felt it was important that our senior technicians be involved with the selection process so we could gain knowledge from their experience working with the equipment," Dr. Tegelaers says. "They notice the important details, such as the ability to load reagents during the run without going into standby mode. They also like that it's such an intuitive system. Any time there's a change, you expect at least some problems in the organization, but actually there have been none."

By consolidating the full menu of immunoassay and chemistry testing on the LXI 725, the lab can run assays from one tube on one analyzer. And consolidating routine testing on the LX20 PRO systems improves efficiency even more. The lab is using 40 percent fewer tubes – decreasing from eight tubes per patient to five, on average.

The speed of the systems allows the lab to increase capacity and solve its peak-hour problems. Plus, the lab enjoys the benefits of the systems' closed-tube sampling (CTS) technology. Both are the only chemistry systems on the market with CTS, which automatically pierces the tube's stopper and aspirates the sample. CTS eliminates the need for manual de-capping and re-capping of specimen tubes.

"The equipment does everything," says Dr. Tegelaers. "Now the technician can focus on results and eliminate the stress and redundancy of the manual tasks. Compared to our old Johnson & Johnson system, Beckman Coulter's solution reduced our manual steps, increasing our efficiency and test turnaround time."

In addition to lowering overall costs, CTS helps protect lab staff from potential biohazards, such as cuts, splashes and aerosol contamination, and repetitive motion injuries. It can also help reduce erroneous results caused by cross-contamination and evaporation.

Service and Savings

An added bonus for Tegelaers was the smooth transition to the new system. A detailed implementation and training plan meant that even with MC Alkmaar's high number of part-time lab technicians, the conversion was fast and virtually seamless, Dr. Tegelaers says.

The new Beckman Coulter equipment went online March 1, 2004. New efficiencies are yielding better TAT as well as financial savings, Tegelaers says, but he can't yet quantify the improvements. He does know the labs will save about 12,000 euros a year on tubes.

As they look to the future, the laboratory staff is eager to work with Beckman Coulter to automate the labs' preanalytical systems and consolidate chemistry testing in one location.

"The Beckman Coulter system is ideal for us," Dr. Tegelaers says. "We anticipate that the efficiencies we have gained are only the beginning."



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