

One lab pairs their pneumatic tube system perfectly with StatSpin centrifuges from Iris Sample Processing

by Stephen Noonoo

When the lab at Stormont-Vail Regional Health Center was told that its hospital would be opening a brand-new emergency and trauma wing, all but guaranteeing an increase in specimen volume, its lab knew they would have to implement some big changes to keep pace. The problem seems familiar enough, but the lab's forward-thinking, Lean-like solution was anything but.

Stormont-Vail Regional Health Center, Topeka, Kan, is a 586-bed acute care referral center in the midst of a growth spurt. Designed to keep up with an annual 5% increase in emergency department patients, a new four-story, 120,000 square foot emergency and trauma center is set to open, which will boast new in-patient beds, a clinical decision unit, as well as a new critical care unit.

Currently, the Stormont-Vail lab is not only responsible for performing reference work for its own burgeoning health care community, but for a variety of smaller hospitals and clients as well. With demand for lab services streaming in from all directions, the lab had to take a close look at its own efficiency.

"We felt that we had gotten as much improvement as we could with the processes we had," says Shelley D'Attilio, MT(ASCP), the lab's manager for chemistry, cytology, and histology, who has been with Stormont-Vail since 1992. "There was no way really to control the amount of time that it took once the specimen was sent by the emergency department to when it got on the desk in chemistry and could be spun down."

No one wanted to have to put POC analyzers right in the ER, but to continue keeping its head above water with a potential flood of new specimens pouring in from the expanded emergency department, the lab knew it would have to improve its current workflow.

Location, Location

Fortunately the right solution was only steps away. The lab already had a fully functional pneumatic tube system in place, which zips samples from the point of care right into the lab for testing, much like the chutes used to send checks at a drive-through bank. But the existing tube station was a trek from the lab's centrifuges and analyzers, and ferrying samples over to the testing area and back took techs a considerable amount of time. With construction soon to begin on the new wing anyway, the obvious solution seemed to build a new tube station right at the main testing area.

"We built a new station directly into the core lab in between chemistry and hematology," explains D'Attilio. Anticipating increased volume from the new wing, the new station, and adjoining bench, was built to exclusively link the lab and the emergency department. "Our goal was to improve our services and turnaround time for the emergency department," she says, "and hopefully not limit the introduction of point of care testing in lieu

of keeping the testing in the laboratory. "

The entire process from conception to implementation took about nine months total, which included about two weeks of in-lab construction. Finally, the lab began its trial period in late January 2009.

All Quiet

To further speed up turnaround time, the lab also purchased new StatSpin Express 4 centrifuges from Iris Sample Processing, Westwood, Mass, and placed them right at the new tube and testing station in the core lab.

Before purchasing StatSpins, the lab had tried another centrifuge near the tube station, but it didn't quite stack up. "The footprint was a little bigger and it was a little bit noisier," says D'Attilio. The real deal breaker, however, was the noise. "It was just too loud," says D'Attilio of the site's previous centrifuge. At the time the tube system did not have an audible alarm signaling when a specimen arrived. "If you had a centrifuge roaring right next to your head, it was very difficult to hear the tube drop," she says.

The StatSpin Express 4 is a high-speed horizontal centrifuge, which can provide separation in as little as three minutes and can process as many as eight samples at once. The StatSpin's compact footprint was an added bonus, allowing the lab to nestle it directly adjacent to both the tube system and chemistry analyzers, with plenty of space for techs to stretch out.

And while centrifuges are generally some of the most stable lab equipment, D'Attilio praises the company's responsiveness to any problems that might arise. "We actually had an issue when we first got it, when it was in its demo period" she says. "We called Iris tech support and they talked us through it and were really great."

Results Are In

Before building the new emergency-exclusive tube station and stat bench, the lab was experiencing a veritable traffic jam of specimens from all over backing up in the tube and waiting to be spun. Now, after specimens are collected and labeled in the ER and sent through the tube system, they are ready to be spun and put directly on the analyzer, all in one shot. The results are then interfaced with the lab's LIS and even auto-verified.

Many techs, however, expressed some initial trepidation about unwanted expense and potential inconvenience the project could bring and D'Attilio remembers the techs asking if they would even see a decrease in turnaround time.

The results, however, spoke for themselves. Using national benchmarks, the lab discovered just how big a difference the seamlessly integrated new tube station and centrifuges have really made. In April 2008 the lab had about one quarter of its specimens verified within 30 minutes of receipt in lab, with most, 70.4%, completed in less than 45 minutes. Just one year later a stunning 63% of all specimen samples were being returned within 30 minutes, with only about one-third taking up to 45 minutes or more.

“You can see the marked improvement,” says D’Attilio of the impressive new numbers—which have been prominently posted on a side of the tube system for all to see.

“The project has required everyone to get on board—even those who were skeptical and resistant,” she says. Improved numbers have led to improved attitudes among techs working the new station and D’Attilio is grateful for the way her team has stepped up to the plate. “I think it definitely shows,” she says. “We’re very proud of the improvement.”

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