Cross-training of laboratory personnel will be an imperative given the smaller numbers of people available.

Selecting inappropriate levels of automation is one of the biggest mistakes made by labs because they have not sought out the root cause of their current problems. Laboratory managers erroneously believe that automating their value-added processes will magically transform them into best-in-class performance (see Figure 2). Automation systems are expensive to buy and maintain; a thorough study of the laboratory’s processes should be conducted before any decisions are made. The goal is to make laboratory operations simpler and more efficient, not more complicated.

Your highly trained laboratory personnel are still your greatest resource for determining the proper level of automation to install. They are the experts and will be able to pinpoint the areas where automation can help and where it will just get in the way. Carefully mapping and timing all of the steps involved in obtaining lab results is crucial: collect specimens, transport them to the lab, sort them, process them, transport them to the testing areas, test them, release results, and store the specimens. Many of these steps have an automated solution, but you must decide what solution best fits your reality and when it should be implemented.

The laboratory staffing shortage is unfolding. This is not a time to take a “wait and see” approach. Your strategic response to this workplace threat should be proactive and focused on something you can implement and manage. This article suggests educational initiatives, human-resource-positioning strategies, Lean/Six Sigma approaches, and equipment/automation solutions that may help you resolve issues related to the lab staffing crunch.

References

Advanced urinalysis technology and Lean management help a hospital lab improve productivity

By Kari Amacher, CLS(ASCP)

It is now axiomatic in the hospital lab industry that it takes two kinds of technology — not just one — to substantially improve the lab’s productivity. The first type is information technology and robotics as embodied in automated analyzers. It is widely recognized that automation will yield disappointing results unless it is matched with input from a second “technology” — management science.

“Don’t automate bad processes,” the saying goes. This means that management experts should review processes to make them as efficient as possible before the lab purchases new instruments. Otherwise, the end product will be a lab that, despite all the state-of-the-art equipment, is still producing well below its potential.

The urinalysis section of the lab at Fairview Ridges Hospital in Burnsville, MN, exemplifies the successful application of the automation-plus-management-science approach. Like many labs today, Fairview used Lean management principles to evaluate the lab’s overall processes and design to a maximally efficient workflow. One of the conclusions of the analysis was that the lab should automate where that was feasible, so that one staff person could monitor all the lab’s core instruments.

That innovation meant replacing the lab’s previous urinalysis instrument with a new analyzer that automated many processes that once had to be performed manually with the old system. Most importantly, the new analyzer automated microscopy. The previous system only automated the macroscopic aspect of urinalysis, not the microscopic. The new system automated the entire process.

Once the new system was installed, lab staff members began monitoring its turnaround times (TAT) to make sure they were within targets of under 25 minutes 90% of the time set for the lab’s core instruments as a whole. The fact that the target is being consistently hit in the urinalysis section is a testimony to the effectiveness of Fairview’s two-pronged approach.

Background

When applied to healthcare labs, Lean entails analyzing work activities or processes to eliminate waste, variation, and unnecessary motions that compromise efficient output. Lean was implemented at Fairview Ridges in Spring 2004, in large part because administration saw the need to improve the lab staff’s efficiency and productivity. The project commenced with the training of key personnel in the application of Lean principles.

Following the education phase, work processes were videotaped and dissected second by second so that every inefficient motion could be “edited out” and a more productive form of working could replace it. Analysis of the tapes determined what was and was not needed on each workbench, where it was needed, and in what order it was needed. All work processes were standardized to minimize time-consuming variation and wasted motion. The hospital then reconfigured the lab and purchased appropriate instruments to implement the recommendations of the Lean analysis.

In the current design, instruments that make up what the lab calls its core are arranged in a circle, and in an order such that technologists can move from one instrument to the next without having to go back and forth. (Core instruments are those that perform the highest volume tests at Fairview.) Per Fairview Ridges’ Lean evaluation, all the core instruments are automated and can be operated by one person. Thus, a single technologist per shift monitors the entire core, moving around the circle from one instrument to the next. All confirmatory tests which must be performed manually are done outside the core.

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