In many hospitals, asset management focuses on the activities related to acquiring and maintaining a piece of equipment over its life cycle. How that piece of equipment—an IV pump, for example—contributes to or detracts from operating and capital expenses is seldom measured, examined or managed. Unfortunately, the failure to make that connection in the healthcare industry results in billions of lost dollars each year.

Recognizing a need to rethink its asset management strategy, Emory Healthcare—the largest, most comprehensive health system in Georgia—embarked on an innovative approach with GE Healthcare. Through workflow change and technology enablement, Emory is shifting its focus from asset “maintenance” to asset “optimization.” As a result, Emory has the ability to reduce operating and capital expenses, enhance productivity and improve patient and employee satisfaction.

A Streamlined Approach

As the clinical arm of the Robert W. Woodruff Health Sciences Center, Emory Healthcare has 1,184 licensed patient beds, 12,000 employees and more than 20 health centers located throughout metro Atlanta. In such a complex environment, locating and keeping track of equipment can be challenging. This is particularly true when it comes to devices like IV pumps, which travel throughout clinical settings and often require quick turnaround. With the help of GE Healthcare, Emory was able to address this issue by successfully implementing an RTLS (real-time locator system) in two of its major hospitals.

With the momentum gained from the RTLS project, Emory decided to push the concept of asset management even further. Leaders wanted to understand not only how IV pumps were being used but how they could be used more efficiently from the standpoint of quality and savings. In other words, Emory wanted to move toward asset optimization.

Emory’s goals for optimization are being realized through a pioneering pilot program in the organization’s cardiology and cardiothoracic surgery ICUs, where the demand for IV pumps is at its greatest and timing is at its most critical. The pilot program was implemented using a three-step approach, which included the following:

Step 1: Analysis and Design. Using Lean techniques, staff from Emory and GE Healthcare examined Emory’s current situation by mapping processes, identifying blockages and waste in those processes, assessing the role of technology and interviewing stakeholders to gain insight. Next, they gathered data—such as utilization trends and how those trends aligned with inventory—to identify the desired characteristics of a future state. With this information, the team then designed a future state in which those characteristics could be realized.

For example, leaders believed that Emory would need a right-sized pump inventory and a redesigned pump process flow. They also developed a plan that delineated exactly how Emory could reach the desired future state, which included a detailed business case, success metrics and a cultural assessment for change.

Arnold Barros
Director, Anesthesia Services
Emory Healthcare
Step 2: Pump Process Modeling. The next step in Emory’s infusion pump optimization effort was to create standard work processes for each component of the pump utilization cycle, such as the disinfecting process. By standardizing each step, the team created a repeatable, reliable and sustainable process.

Emory also standardized a layout for pump inventory. In four of its ICUs, Emory implemented a Supermarket, which is a specifically designated area that houses the IV pumps, and kanban, a layout technique that organizes IV pumps based on visual elements—like color—so nurses can quickly identify equipment.

Connected to Emory’s RTLS, the Supermarket is maintained at a specific level by the nurse manager and equipment technician to ensure sufficient inventory to meet daily demand.

“We have changed our entire mind-set of how we approach equipment,” says Arnold Barros, director, Anesthesia Services, Emory Healthcare. “We have evolved from being reactionary to working proactively. We have witnessed immediate and dramatic improvement in satisfaction among our nurses who no longer need to request, wait or search for IV pumps when they need them. Additionally, with the kanban we can visually manage our Supermarket inventory and only have to order when needed.”

Step 3: Running and Sustaining the Pilot. The technical skill, expertise and experience of GE Healthcare’s team were critical in helping Emory implement the pilot. The final phase of the program was to transfer knowledge and skills to Emory’s staff, help them capture anticipated changes and develop a road map for changes and scheduled reviews.

Lessons Learned

Through the program, Emory has experienced better use of its existing infusion devices. One goal was to eliminate the time nurses spent on the nonvalue-added activity of searching the hospital for IV pumps. Emory was able to reduce its pump turnaround time—which measures the time from request to the delivery of an IV pump—from between 20 and 120 minutes to less than five minutes as a result of implementing the Supermarket concept. Consequently, Emory expects that scores for employee satisfaction will improve under the question, “Do you have materials to perform your job?”

Furthermore, Emory had invested a significant amount from its budget to refresh its existing pump base of 604. However, once the new process is extrapolated out to the entire Emory system, the organization will have sufficient pumps at existing inventory levels.

“As with any company or department, when you take waste out, the entire organization becomes better,” says Simon Walls, general manager, Asset Management Solutions, GE Healthcare. “The right assets are available at the right time in the right place and in proper working order. Capital and operating dollars are freed up, supporting long-term viability and growth.”

“This pilot program has certainly helped us move closer to our goals,” says Barros. “In just eight months, we have charted a proven course as to how we can optimize infusion devices throughout our entire organization to become much more efficient—and enable us to continue providing the highest quality healthcare.”

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