Case Study: Hospital Benefits From Standardizing Surgical Instrumentation

Mercy Hospital Cadillac in Cadillac, Michigan is a non-profit, acute care hospital providing health care to more than 80,000 residents across seven counties. In 2009, Thompson Reuters named the facility one of the nation's 100 Top Hospitals for its achievements in clinical outcomes, patient safety, patient satisfaction, financial performance and operational efficiency.

The surgeons at Mercy Hospital Cadillac were using a broad range of instruments from various manufacturers to cut, grasp, dissect and seal tissue during laparoscopic procedures. Even within a single manufacturer’s line, surgeons were using different generations of the same product. This presented a number of administrative, clinical, financial and safety issues.

“It was absolute chaos—a hodge podge of anything and everything,” said Rachel Chase, RN, operating room manager for Mercy Hospital Cadillac. “There wasn’t a standard set so it was very difficult to ensure that each physician got what he or she needed for a case.”

With so many different instruments, the Central Supply team had to pull and wrap individual trays based on the preferences of each surgeon. In the OR, the staff had a difficult time identifying the correct instrument when a surgeon requested it. This increased time and labor, disrupted the flow of surgery and decreased staff and surgeon satisfaction.

“Because there wasn’t a standard set, it was very difficult to service the physicians with what they really wanted and needed,” said Chase.

Instrument maintenance was a challenge as well. The wide variety of instruments required different cleaning procedures so there was confusion among the staff on how to clean them. According to Chase, some earlier instruments did not feature a cleaning port so the staff never really knew whether or not they were cleaned properly.

“We just didn’t have the knowledge or the employees to maintain and check the functionality of the equipment,” said Deb Lindsey, Central Supply Manager Mercy Hospital Cadillac.

The electrocautery devices proved the most challenging to maintain, which presented a patient safety concern. The staff had a difficult time evaluating the instruments to ensure the insulation was intact. If the insulation was damaged, there was the potential for electrical energy to spread beyond the intended area within the patient’s body, causing inadvertent thermal damage to surrounding tissue.

Compounding the issue, the components for the electrocautery devices were sent to a reprocessor for reinsulation. Because the reprocessor reinsulated components from many different hospitals, Mercy Hospital Cadillac never knew if they were receiving back their own components and how many times the components that they were receiving had been used and reinsulated.

“Luckily we never had any patient injuries but the potential was always there,” said Chase.

The other laparoscopic instruments were sent back to their respective manufacturers for repair. In some cases, the turnaround time was so long that the staff at Mercy Hospital Cadillac had to reschedule surgeries because they did not have the correct instruments in-house. In other cases, surgeons would have to use earlier generation instruments that did not completely meet their needs.

All of these issues increased costs for the hospital—costs associated with having to purchase and repair the instruments, as well as the time and labor required to manage and maintain them.

In 2002, Mercy Hospital Cadillac found a solution when they met with a representative for Microline. He proposed a single line of laparoscopic instrumentation and a tip replacement program that would address the hospital’s many challenges.

The Microline reposable laparoscopic surgical system is comprised of the ReNew™ universal reusable hand piece and a wide variety of disposable tips for tissue cutting, grasping and dissecting. This reposable system offers the clinical and economic benefits of a fully reusable instrument combined with the quality and precision of a disposable instrument. The scissor tips and electrocautery probes are changed after every case, while the grasper and dissector tips can be used many times before they must be discarded, providing a significant cost savings over single-use devices.

“We realized that having one handle that could be used with a wide variety of tips would provide a huge cost savings all around,” said Chase.

“Another great benefit is that we can add and remove tips as the technology advances so that we’re always meeting the changing needs of our physicians,” said

Lindsey.

Under the tip replacement program, Microline Pentax replaces all of Mercy Hospital Cadillac's reusable grasper and dissector tips with new tips on a monthly basis. A technician visits the facility each month to inspect the quality of the handles and tips, which includes a quality check of the electrocautery device insulation. In addition, Microline has trained Mercy Hospital Cadillac's Central Supply team on how to inspect the condition of the instruments, enabling them to perform assessments between procedures.

"We always know that the handles and tips are in good working order and we never need to worry about not having what we need for a case," said Chase.

According to Chase and Lindsey, they had no problem transitioning the surgeons to the Microline system.

"Microline has such great products that the surgeons were happy to switch," said Lindsey. "They've found the handles and the tips to be well constructed and dependable. Another plus is that the tips are interchangeable, so they can multitask with the same instrument."

The single system has greatly improved workflow for the Central Supply staff. Since surgeons now use a single product line versus products from a variety of manufacturers, the staff now counts, assembles and wraps standard instrument trays that can be used across multiple procedures and specialties. They take photos of the standard trays to ensure that they are assembled the same way every time, streamlining the process and ensuring the surgeons have exactly what they need for each case.

"The continuity of having the same instruments for every one of the surgeons has been a blessing," said Lindsey. "Our productivity has increased since we no longer have to pull everything separately. When a set is wrapped and complete it is ready to go."

This standardization benefits the staff in the OR as well.

"There are no longer any arguments about who gets what set because it is all the same and it all works extremely well," said Chase. "It is much more efficient to have a standard tray because you know exactly where things are when you're reaching for them in the OR."

The Microline instruments and program has simplified Mercy Hospital Cadillac's cleaning and maintenance regimen. Since the surgeons are using a single instrument line, the technicians follow the same process to clean all of the components. According to Lindsey, the resposable design is easier to dissemble and clean, saving time and facilitating proper hygiene. And because the instruments are durable, they require minimal repairs.

According to Chase and Lindsey, there has been a patient safety benefit as well.

Since the handles and tips are regularly inspected and replaced, surgeons are always using the highest quality instrumentation. And since the electrocautery tips are replaced after every use, there is less risk that the insulation will become compromised, minimizing the danger of inadvertent tissue damage.

“Patient safety is one of the greatest benefits,” said Lindsey. “If an instrument does not pass the quality test, there is a one-day turnaround to replace it.

“From ordering all the way through to in-servicing the process is worry-free,” continues Lindsey. “Our representative is awesome—he’s always there to make sure that we have what the surgeons want—the convenience is wonderful.”

In closing, Chase states, “All of our struggles are gone. Microline has met all of our needs 10 fold—patient safety, surgeon satisfaction and staff/technician satisfaction. I just can’t say enough.”

Source URL (retrieved on *08/21/2014 - 2:26am*):
http://www.surgicalproductsmag.com/articles/2009/09/case-study-hospital-benefits-standardizing-surgical-instrumentation