



PARTNERSHIP ENABLES AWARD-WINNING HOSPITAL TO DELIVER OPTIMAL PATIENT CARE WITH IMPROVED OPERATING ROOM EFFICIENCIES

Who do you turn to when you're a leading hospital undergoing rapid expansion, and your existing service provider for endoscopic OR products has fallen short? The team at OhioHealth Riverside Methodist Hospital partnered with an innovative company and utilized proven methods and expert onsite staff to make significant improvements in how endoscopic products are maintained and repaired. As a result, they have not only resolved existing challenges, but are achieving unprecedented levels of quality, safety and efficiency across the board.

> BACKGROUND:

About OhioHealth Riverside Methodist Hospital

Located in Columbus, Ohio, Riverside Methodist Hospital has been named a 100 Top Hospital® for 11 years and an Everest Award winner for two consecutive years by Truven Health Analytics. Riverside Methodist has also been recognized under its parents company, OhioHealth, as a Fortune magazine "100 Best Places to Work" for eight consecutive years.



With more than 6,000 employees and more than 1,200 physicians on staff, Riverside Methodist Hospital is one of the largest medical institutions in the Midwest. The facility offers a broad range of top speciality

centers—from Cancer, Heart and Vascular Services, Neuroscience, Women's Health, Emergency and Trauma Services, Hand and Microvascular Surgery, Orthopedics, Minimally Invasive Surgery, Imaging and Bariatric Surgery.

As part of an ongoing commitment to refine the facilities and build on their strong tradition of excellence, Riverside Methodist Hospital began implementing a plan to significantly upgrade operating room (OR) systems and equipment in 2006.

The upgrades included:

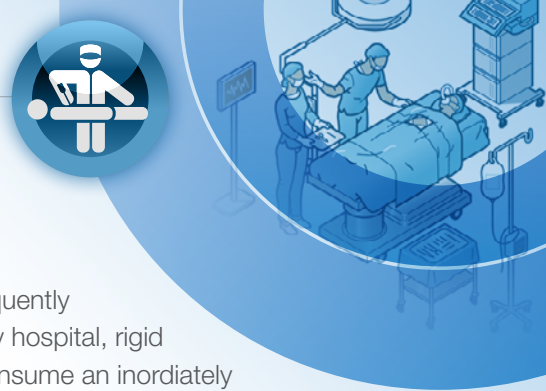
- 17 OR1® Integrated suites
- Integration of the Cath Lab and Center for Medical Education & Innovation
- Endovascular suite equipped with Philips C-arm and integrated OR1® system
- 18 sets of laparoscopic instrumentation and four sets of bariatric instrumentation
- Electronic documentation in the OR
- Computerized lab and radiology systems

With the planned introduction of these leading-edge technologies and expanded capabilities in the OR, existing concerns about the need for more integrated and consistent technical support took on an even greater urgency.

> THE CHALLENGE:

Ensuring the quality, consistency and cost effectiveness of endoscopic OR equipment

Prior to the planned OR upgrades, Riverside Methodist Hospital had been using an independent service provider to repair and maintain its endoscopic OR instruments. It was imperative to the OR leadership team that equipment be maintained at the highest level, and there was great dissatisfaction with the existing service. Repairs were expensive, yet quality was inconsistent and did not meet the OR team's high standards. For example, endoscopes had continual fogging issues, even immediately after they were repaired.



Identifying units in need of repair or replacement was another major concern. While obvious issues—such as an endoscope with a chipped lens or a bent instrument—were identified and repaired, less obvious issues frequently slipped past the Sterile Processing Department (SPD). As a result, non-functional equipment was often delivered to the OR. Endoscissors and spatulas were prime examples. At a certain point, endoscissors become dull and additional sharpening is ineffective. In the SPD, endoscissors were often processed and put back into sets after they had passed this point. With spatulas, the protective coating eventually wears off at the tip, creating a safety problem. It was not uncommon to find a spatula with an exposed shaft, which posed a significant injury risk. Due to diligent inspection and quality control during case setup in the OR, the hospital never experienced any injuries due to these issues.

MANY HOSPITALS ARE OPERATING WITH COMPROMISED RIGID TELESCOPE INVENTORIES

The hospital also had difficulty tracking equipment when it went out for repair, and maintaining a complete maintenance and repair history on individual pieces. With the existing third-party vendor, it was not uncommon for an instrument to be out for repair for two to four weeks at a time. Downtime was an even greater issue when broken or missing equipment needed to be replaced. As a result, incomplete sets often remained in use and the OR team would frequently have to replace a missing instrument with a disposable one.

The biggest indicator of a need for change was that OR leaders at Riverside Methodist were receiving an average of two complaints per day from surgeons about non-functioning instruments, incomplete sets and a variety of other issues.

One of the most frequently serviced items in any hospital, rigid telescope repairs consume an inordinately high percentage of hospitals' repair budgets. In fact, KARL STORZ replaces an estimated 40,000 rigid telescopes broken per year. Many of these replacements could be avoided with proper care and handling.

Most hospitals, however, simply do not have the resources, time or in-house expertise to ensure the proper care and handling of rigid telescopes. As such, a high number of compromised rigid telescopes remain undetected during reprocessing steps and are placed back into circulation. As a result, many hospitals are operating with compromised inventories of rigid telescopes that can lead to poor image quality, frustrated surgeons, decreased OR efficiency and increased patient safety risks. All of these may pose additional costs that impact the bottom line.

> THE SOLUTION:

KARL STORZ Protection 1® Services

In 2006, when Riverside Methodist began to implement planned OR expansions and upgrades, the OR caseload for laparoscopic volume was estimated at approximately 1,500 procedures per year. However, actual procedures exceeded 2,500 per year due to growth in bariatric and minimally invasive procedures. The OR leadership team knew it was a critical time to revamp and strengthen their technical support systems.

After thorough research and examination, OR leaders selected Protection 1® as their endoscopic service provider. The KARL STORZ Protection 1® service program is designed to provide turnkey maintenance and management of OR instrumentation, video systems and other surgical technology. A critical component of the Protection 1® service offering is the Onsite Endoscopic Specialist (OES).



At Riverside Methodist, a Protection 1® OES was established on a full-time basis (80 percent in SPD, and 20 percent in the OR), and quickly became a trusted partner and advisor to surgeons and staff by providing the following services and expertise:

Daily maintenance checks and management of endoscopy products

Each integrated operating room and cart-based video system is inspected by the OES on a daily basis to ensure that image routing, capture and display are in excellent working condition. As daily surgical volume is completed, the OES shifts focus to prepare instrument sets for the next day's procedures, but remains available for technical support as needed.

Comprehensive training for both OR and SPD staff



Education and training also is a cornerstone of the Protection 1® program. At Riverside Methodist, both initial training and intensive one-on-one training were provided as each integrated OR

suite opened and as changes in instrumentation sets were introduced. For example, when flexible ureteroscopes became available, an additional round of group education was arranged. Throughout training, the OES established relationships that facilitated clear communication and problem solving. The OES was either notified when a problem occurred, or would proactively identify issues and plan appropriate actions.

As a result of this collaboration, the OES has created a number of innovative solutions to support training efforts. For example, after a planned training session for a new instrument, the OES created a simple take-along information sheet, or "cheat sheet," that effectively outlined

the instrument's controls and provided valuable setup and troubleshooting tips.

Monitoring and resolving repair issues

In addition to providing technical support, the Protection 1® OES is instrumental in establishing, educating and implementing care and handling of all KARL STORZ equipment. From this perspective, the OES is able to offer suggestions not only for the SPD, but for the OR team, as well. The OES provides an impartial, but expert viewpoint that results in a fluid system of feedback and support for staff.

For example, after noting recurring damage to flexible ureteroscopes, the OES provided pictures of a scope that had been crushed between two trays while in the dryer. The photos provided a powerful illustration of the problem and were the catalyst for resolving the issue. Because the OES was familiar with all processes that occur when instruments travel between the OR and SPD, the OES was able to offer suggestions to prevent further damage. These included recommending changes for scope storage, as well as a process for leak testing and for signing the instruments in and out. The OES, OR and SPD staff worked cohesively to implement a solution that maintained the integrity of the equipment and saved significant repair and replacement costs.

In addition to monitoring repairs, the Protection 1® OES also takes the lead on product replacement and ensures that necessary endoscopic equipment is readily available at all times. The OES has products onsite and at the ready, which minimizes downtime and supports the overall efficiency of the OR team.

Tracking and streamlining repair costs

To help monitor equipment repair costs, the OES provides weekly tracking reports that serve as an important tool for planning and program assessment. The reports enable OR managers to routinely see which scopes have required repair and to help identify opportunities for



improvement. The OES can follow up on issues highlighted in the weekly reports, identify why they are happening and recommend action to prevent the problem from occurring in the future.

Essential face-to-face support

The Protection 1® OES provides face-to-face support throughout the surgical environment, including within the OR during procedures. For example, at Riverside Methodist, the OES checks in with the leadership team each morning to provide a proactive opportunity for them to communicate any concerns and set goals for the day. Discussing the projected case volume, the number of sets needed and any in-room assistance needs helps the OR team and the OES coordinate their activities.

The leadership team at Riverside Methodist has worked diligently to create and maintain an expectation among the staff that they “own” the equipment in the room, and that the OES’ role is to support the independent function of the staff in both the OR and the SPD. Although the presence of the OES offers a vital resource for equipment management, the leadership team did not want the OES to become the “sole owner” of the equipment. As a result of the education provided, the OR and SPD staff are fully functional on occasions when the OES is not available.

Riverside Methodist's OR and SPD leadership teams have eliminated 95 percent of their most challenging issues.

The proactive and comprehensive services provided by Protection 1® OES has achieved significant results at Riverside Methodist Hospital:

- Excellent quality control is maintained for all endoscopic equipment. This is illustrated by a strong safety record and a high degree of surgeon confidence. In fact, there were no surgeon complaints about endoscopic instruments over an entire 12-month period.
- Lower repair and maintenance costs have been achieved through education on the proper care and handling of instruments, and through the switch from mostly disposable to more reusable products.
- OR downtime is virtually nonexistent because endoscopic equipment is consistently available and in working condition. Replacement products are on hand 90 percent of the time, and worn out or damaged equipment is immediately pulled out of service and replaced or repaired. The increased availability of complete sets in working condition also has reduced flash sterilization for instrument sets to less than one-half of one percent.

> THE RESULTS:

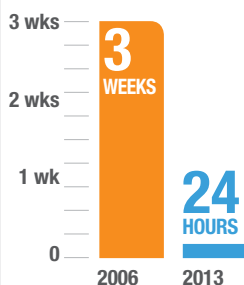
The Protection 1® Difference

Not Using the Protection 1® System Using the Protection 1® System

95% of Endoscopy Issues Resolved

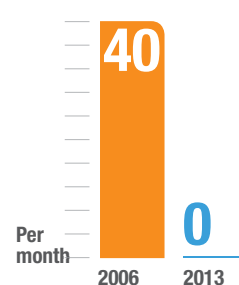


Decrease in Equipment Turnaround Time



Based on SPD cycle time comparison of 3rd party provider repair vs. KARL STORZ Exchange program
Impress® Instrument Management System, V.Mueller

Decrease in Surgeon Complaints



Surgeon Complaints, annual physician satisfaction survey



- A 24-hour turnaround time has been established for problem identification, implementation and resolution, which is seldom seen in sterile processing.
- Enhanced communication and collaboration has led to efficient problem solving. This is the result of daily, face-to-face interactions between the OES and OR leadership team.
- Education and confidence for surgeons and staff is at an all-time high due to the success of OES training and greater emphasis on ongoing education and, as a result, new technologies are embraced more quickly.
- Optimal surgical performance is ensured, even at high volume—in 2012, 1,060 laparoscopic cholecystectomies were performed at Riverside Methodist and there were almost 3,000 total laparoscopic surgeries. It is exceptional that thousands of procedures are performed without any physician complaints about instrumentation.

Through their partnership with KARL STORZ, Riverside Methodist Hospital's OR and SPD leadership teams have eliminated 95 percent of the issues that used to present significant daily and ongoing challenges. The expertise, integrity and trusted partnership provided by KARL STORZ Protection 1® Services has helped Riverside Methodist raise the bar on quality, safety and cost effectiveness, while enhancing their already excellent reputation for industry leadership and patient care.

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ABOUT KARL STORZ

In 1945, Dr. Karl Storz began developing instruments that would allow physicians to see inside the human body. His visionary inventions were at the forefront of modern endoscopy, which not only revolutionized medical diagnostics, but also paved the way for minimally invasive surgery.

More than 65 years later, the KARL STORZ company continues to be a worldwide leader in advanced endoscopy solutions. The family-owned company, based in Tuttlingen, Germany, maintains an unwavering commitment to innovation, intelligent design and clinical effectiveness.

To ensure complete solutions in minimally invasive surgery, KARL STORZ provides comprehensive repair and support services. KARL STORZ products are backed by their own service solutions through Protection 1.® This program includes Field Service Technicians, endoscope exchanges and dedicated On-Site Endoscopic Specialists who deliver ongoing support.

For more information, call (800) 421.0837 or visit www.karlstorz.com.