MeritCare endoscopy department increases operational efficiency by 30%

MeritCare Health System, headquartered in Fargo, North Dakota, is the largest hospital and private employer in the state. With an employee base of approximately 7200, MeritCare’s service area spans 250 miles and includes 17 locations in the Fargo-Moorhead area plus 9 regional clinics in North Dakota. Its service territory also extends into Minnesota with 20 regional clinics and 1 hospital.

For the past four years, MeritCare has focused on improving its operational efficiencies. To date, process improvement efforts have focused mainly on the Endoscopy Lab. Recent completion of renovation work on the lab opened the door for moving forward with several other process improvement activities. These activities fall in line with MeritCare’s system-wide campaign to embrace streamlined methodologies to stave off shortfalls from tightening reimbursement policies. The strategic initiatives are meant to challenge all physicians, departments, and regional locations to re-examine their procedures, processes, and technologies to implement cost and operational efficiencies while better serving the large patient base.
Implementing excellence.

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**Taking on the challenge of lean methodology**

MeritCare’s Endoscopy Lab has helped demonstrate the value of improving efficiencies through process evaluation and redesign. As the largest provider of GI services in the Fargo-Moorhead region, the lab does more than 9,000 procedures per year. Their services include bronchoscopy, EGD, colonoscopy and ERCP, as well as EUS, motility, fine needle aspiration (FNA), and pH studies for the diagnoses of esophageal reflux. The Endoscopy Lab houses 7 procedure rooms (1 with fluoroscopy), 3 prep rooms, and 14 recovery bays. There are 7 gastroenterologists in the lab along with surgeons, pulmonologists, and a pediatric gastroenterologist. Orchestrating its operation and overseeing the staff of 19 is Clinical Coordinator Lori Denis, RN, who joined MeritCare in 2006.

As part of the renovation, the lab upgraded its unit with new Olympus equipment and started to improve its operational efficiency in line with the hospital’s lean methodology principles. This was one of several efforts that the department had identified as part of its overall operational improvement plan.

“When I arrived in 2006, there was a backlog of 1,280 patients on the endoscopy wait list,” says Denis. “By the time the renovation was completed in late 2007, we had pared the list down to 800, but we obviously still had a lot of work to do.” To help with that effort and to identify opportunities for improvement, Denis invited the Olympus EndoSite Consulting team to perform an Operations and Efficiency analysis of her department.

**Adding some outside perspective**

Olympus Nurse Consultants Vicki Thavorides, RN, MHSA, and Vanessa Monroe, MBA, BSN, RN, CNOR, joined Denis in her Lab for two days. “The Olympus team scrutinized every aspect of our operation from start to finish, looking at our throughput, scheduling, staffing mix, workflow, layout, and space utilization, reprocessing setup and infection control processes as well as our inventory system,” says Denis.

The two nurse consultants quickly realized that they were teaming with a facility that not only recognized the need for change, but would eagerly embrace it. “We were so pleased to work with the GI staff at MeritCare because we knew under Lori’s tutelage they were going to take action,” says Monroe.

In fact, change-agent Denis was so enthusiastic to begin implementation, she asked for immediate verbal feedback from Thavorides and Monroe and began working on implementation steps before the official report was released. “We were able to improve the workflow in our scope reprocessing room and drastically improve aspects of our infection control almost immediately,” agrees Denis.

**Enhancing patient throughput**

**Issue:** With better designed space and new equipment after the renovation, along with ample staff, the wait list remained long. “Patient throughput was a known challenge from the start,” says Denis.

**Solution:** Throughput in large part is a function of scheduling, staffing, and workflow, ensuring there are no lulls or bottlenecks along the way. “Fifty percent of the lab’s recovery space was underutilized because they simply weren’t able to process enough volume to fill it,” says Thavorides. “So we took a look at scheduling, staffing mix, and workflow to see where MeritCare could make improvements, providing them with recommendations and sample models. In MeritCare’s case, we identified opportunities for the improvement, and Lori and the GI staff were then able to develop the details and workflows that fit their needs in coordinated efforts with the hospital physicians and quality management engineers. It was teamwork at its best.”

**Result:** In January 2008, prior to implementation of any changes, the lab’s wait list for screening procedures contained 800 patients. With the 30% boost in daily patient throughput, that list had been reduced to 100 by early April, with every patient on the list now contacted for scheduling.
Switching over to modified block scheduling

**Issue:** One of the problem areas identified by the consultants was the lab’s use of block scheduling for each physician. “Block scheduling per se was not the issue but how it was being utilized by each physician,” says Thavorides. “In the traditional use of block time, a physician is given a predetermined block of time for scheduling that is basically controlled by the individual practice patterns of the physician. A block of time is a fixed element that cannot be changed; the only opportunity is how that block of time is utilized.”

**Solution:** Since the endoscopy physicians are MeritCare Medical Group employees, Denis was able to pursue modified block scheduling, where patients are scheduled for specific times, rather than given an appointment with a specific doctor (unless they request otherwise). Once the patient is prepped and ready to go, they are sent in to the first available doctor.

**Result:** Originally, the lab’s procedures per hour (pph) averaged 1.44. With the implementation of the modified block scheduling and other changes to workflows recommended by the Olympus Nurse Consultants, the project team had established pph targets as the system was tested. The ultimate goal was 2.0 pph. The first few days of the new system surpassed expectations with 1.66 pph to 1.88 pph. “Within a month of implementation, we were already averaging 1.78 to 2.1 on a daily basis and we continue to do so. We are pretty pumped,” laughs Denis.

Reconfiguring workflow

**Issue:** Originally, each area of MeritCare’s perioperative endoscopy unit was isolated, creating an inefficient workflow. “Each area was set up for the flow of that area without taking into account overall procedural flow requirements of the endoscopy lab,” explains Monroe. “And of course, each area didn’t have the time to look at their flow within the context of the entire department, so there tended to be some service duplications. Plus, nurses in each procedure room were dependent on input from just one charge nurse, rather than being empowered to run their own ship.”

**Solution:** Through each phase of change needed, the Olympus team made the recommendations, that once implemented, were able to streamline the unit’s overall operation. The team started by eliminating overlaps in service and moving equipment and layouts around to help accommodate a more efficient flow. Denis also changed the nursing/patient protocol for better efficiency. Rather than having each patient handed off from nurse to nurse through the admin, sedation, procedure, and recovery processes, she now has one nurse follow a patient through every step and into post-procedure recovery. “This avoids bottlenecks at any one stage of the procedural process and also creates a better, more personal patient experience,” says Denis.

**Result:** It used to take the lab 30-35 minutes to prep each patient. “Now we’re down to 12-15 minutes per patient,” states Denis. With changes to the scheduling system, improved workflows, better management of daily fluctuations in patient volume, variable procedure times, and process changes in the recovery area, Denis says they have created a more flexible system, helping them realize a 19% decrease in staff overtime on average.

Retooling reprocessing and infection control

**Issue:** The Olympus Consultants saw some challenges with the reprocessing area that could be easily fixed. Sinks were not located by the door for incoming dirty scopes and the automated endoscope reprocessors (AERs) were not by the door for outgoing clean scopes. “It created a cross-traffic scenario that was disruptive to the reprocessing team and created a potential infection control risk,” says Thavorides.

**Solution:** Following EndoSite’s recommendation, Denis had her reprocessing room flipped around and established a strict dirty-to-clean flow protocol, only allowing dirty scopes to come in the door by the newly relocated sinks, and clean scopes only to be picked up by the door near the AERs.

**Result:** Even with the 30% increase in procedural volume, the reprocessing room has been able to handle the additional influx of
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scopes. “The strict flow protocol also serves to heighten staff awareness about infection control protocols as we go about our daily routines,” says Denis.

Shifting strategies for supply management

Issue: One area Olympus Nurse Consultant Monroe identified as an opportunity for immediate cost savings was the lab’s supply setup. “The biggest cost issue with the lab turned out to be a simple one,” says Monroe. “They had not established set par levels of inventory in their endoscopy or supply rooms that supported their procedural needs. The result was an excess of supplies in storage and, therefore, an increase in department expenses and cost per case. This is a common issue in hospitals,” says Monroe. “We suggested they implement a system of par levels for each procedure room as well as central supply. We also suggested separation of sterile supply from non-sterile supply inventories to enhance infection control protocols.”

Solution: To implement EndoSite’s suggestions, a project team was set up, led by MeritCare quality management engineers, to assist with the development. A bin system for supplies was established. The main supply room and each procedure room were stocked with prefilled, uniformly labeled bins. As each bin was utilized in a procedure room, it was taken back to the supply room in exchange for another prefilled bin. This allowed for easy inventory assessments and eliminated inventory overstock.

Result: Within the first month of implementing the Olympus recommendations, the lab saved approximately 28% on supply costs and simplified the time and effort involved in inventory accounting and ordering.

Thinking outside the box for measurable results

“Olympus was beneficial in getting our physicians to start thinking ‘outside the box’ and realize we were wasting a lot of space, time, and money that we could no longer sustain. I cannot say enough about how supportive Vicki and Vanessa were in the process. Because of their input, I was able to accomplish my goals within a two-month period. Olympus has always given me excellent customer service, and I feel this Olympus consulting engagement helped us identify opportunities to improve the efficiency of our Endoscopy Lab,” concludes Denis.

Vicki Thavorides and Vanessa Monroe were equally pleased with the process. “Lori was phenomenal. She was eager to take the recommendations to heart, engage staff participation, and achieve positive outcomes and learning experiences with the implementation. The results achieved by the endoscopy lab are very much a credit to the outstanding efforts of Lori and the MeritCare staff,” says Thavorides.

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