

St. Joseph's Mercy Health Center converts 5,000 forms to electronic format, implements barcoding to improve efficiency and consolidates devices with Lexmark MFPs to gain space, simplify work processes, reduce administrative overhead and slash costs.

## Hospital optimizes output environment and implements centralized electronic forms management solution to eliminate tons of paper and slash costs

### The Organization

The second oldest hospital in Arkansas, St. Joseph's Mercy Health Center is a not-for-profit, faith-based 309-bed acute care facility located on 72 acres. St. Joseph's also operates five community healthcare clinics. Serving the needs of Hot Springs and the surrounding Arkansas communities since 1888, St. Joseph's, a member of the Sisters of Mercy Health System, has built a rich heritage of providing service to the sick and poor with a mission of meeting the changing physical, psychological, spiritual and social needs of a diverse, growing population. Renowned for its scope of services and high caliber physicians and nurses, St. Joseph's remains dedicated to providing care with compassion and is committed to offering the latest advances in healthcare supported by leading-edge technology.

### The Challenge

Hospitals rely on some of the most advanced – and expensive – technology to deliver world-class lifesaving medical services to patients. However, the all-digital hospital of the future without paper records continues to be an elusive vision for the vast majority of hospitals. When it comes to patient care, paper is as vital to hospitals as doctors and nurses. Whether it is a clipboard containing a patient's medical history, a prescription order written by an attending physician or the results of an electrocardiogram test, paper is essential.

St. Joseph's, like most other large hospitals, was awash in paper. In 2002, the hospital had more than 3,500 different forms in use by its 1,500 associates. The cost of printing and maintaining inventories of each form had become prohibitive, and the search-and-destroy mission necessary when forms required regulatory design changes or updates requested by physicians wasted hundreds of hours per year.

Several years ago, St. Joseph's decided to take an important first step toward eliminating paper by replacing pre-printed paper forms with a

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system-wide Lexmark electronic forms solution that represented the industry's most advanced technology at the time. Using Lexmark tools, the hospital converted its thousands of paper forms into electronic images then downloaded and stored those 3,500 images to the internal hard drive of each of its Lexmark monochrome laser printers. Though the quantifiable benefits were immediate and substantial, revising a form meant downloading its updated image to every printer. Replacing or adding printers required lengthy downloads to each printer hard drive.



"This solution was a huge first step forward for us," said Bill Perry, Senior Customer Service Representative. "We knew that further growth would be best served through centralized forms management, since keeping up with changes and making sure that each printer had the latest version of every form would eventually become overwhelming for systems administrators."

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Even though the initial electronic forms solution was indeed an effective step toward eliminating paper, other symptoms of a sub-optimal output environment were still taking a toll on staff productivity. For example, in St. Joseph's emergency and cardiac intensive care units, where nurses devote their total attention to patient care, even the occasional paper jam might go unnoticed and unreported for hours. Various other complaints revealed significant opportunities for other immediate improvements. The pharmacy staff wanted to rid itself of the tedious task of keying in patient ID numbers for the hundreds of prescription orders it received daily. And nurses had grown tired of printing adhesive patient identification labels and sticking them onto the thousands of forms they handled every day. Hospital administrators wanted to increase form accuracy, printer reliability and uptime and reduce overall output costs. Though these calls for improvements might seem unrelated, they could all be solved with a single forms-management solution.

Beyond seeking centralized forms management, St. Joseph's was on a simultaneous mission to slash administrative expenses and reclaim valuable desk space at nursing stations by consolidating separate printer, copier, scanner and fax devices into a single multifunction printer. The hospital called on its trusted output provider, Lexmark, to solve these unique challenges with an innovative and cost-effective solution.

### The Solution

Lexmark started by evaluating the hospital environment, counting devices, understanding operational processes and the pain points clinicians and administrators encountered with its current systems.

"Lexmark healthcare industry experts studied every aspect of our operation, met with dozens of people, and then designed a custom solution to fit our workflow," said Perry.

To consolidate its separate printer, copier, fax and scanner devices, St. Joseph's chose multifunction printers (MFP) from Lexmark. With a high-quality business-class monochrome laser printer at its core, Lexmark MFP technology seamlessly integrates an auto-feed document scanner, copier and network fax into a single space-saving unit. The MFPs have an intuitive touch-screen operator panel that is easy for busy nurses and other staff members to use, with very little training. Old copiers, scanners and fax machines were removed and replaced with new Lexmark MFPs. With the Lexmark MFPs in place, now St. Joseph's could tackle several important workflow projects using one piece of technology. First, the hospital addressed its plethora of forms.

Designers used Lexmark Document Producer (LDP) software to convert electronic versions of all of the hospital forms. All of the forms reside on a server and are available from any authorized printer or MFP that is attached to the hospital network.

"Lexmark designed a custom conversion tool for us and kept its healthcare industry experts on-site throughout the entire conversion process," said Perry. "When it became apparent that LDP needed to support 5,000 forms, Lexmark optimized the systems design for performance and availability with four servers instead of one to provide load balancing and fail-safe redundancy."

Forms are now filled out by clinicians online and include barcodes when printed out that identify the patient and form type. Printing adhesive barcode labels on a separate device and affixing them to paper forms is no longer required, further reducing costs, guaranteeing accuracy and saving clinicians precious time so they can focus more on patients instead of on administrative tasks.

"These barcodes allow us to scan documents into the Lexmark MFP and have them recognized and routed directly to the pharmacy or our

Cerner® ProVision™ system where they are made available to multiple users in multiple places,” said Perry. Easily customized, the touch-screen operator panel on the Lexmark MFPs contains visual icons that simplify tasks, such as scanning a physician order and routing it to the pharmacy, to a single finger button tap.

When a form is updated through LDP and approved, its electronic image is uploaded to the server and is immediately available throughout the hospital network. Nighttime raids of forms cabinets are no longer necessary as the most up to date forms are immediately available to staff. Nurses are no longer stockpiling the most often used forms since the new system ensures they have the most up to date one at their fingertips.

To assure top quality results and simplify operations, St. Joseph's uses only genuine Lexmark toner cartridges. “It was a nightmare to keep toner for so many different brands of copiers, faxes and printers,” said Perry. “With similar printers and MFPs on every floor, they all use one standardized toner cartridge family and that has eliminated the need for stockpiling and hoarding.” The result is direct savings of thousands of dollars annually achieved through a drastic reduction in consumables inventory.

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Since the delivery of world-class healthcare could not be interrupted, Lexmark installed an extra Lexmark MFP in a conference room and conducted brief training classes around the clock to assure that every shift was reached. In addition, on-site Lexmark personnel walked through the entire campus seven times every day to meet with nursing managers and other staff to answer questions and provide hands-on assistance when needed.

“The nurses and managers in our ICU couldn't believe that Lexmark listened to their concerns and even flew in systems engineers to work with them face to face,” said Perry. “Once they realized Lexmark was there to support their very specific needs, they threw their complete support behind the new system.”

Old printers were removed and gradually replaced by new MFPs that communicated with the LDP forms server. Today, St. Joseph's operates several hundred Lexmark devices, including a significant number of MFPs.

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### The Results

The consolidation of separate fax machines, copiers, scanners and printers into Lexmark MFPs that do it all provided St. Joseph's with immediate benefits. Desktop real estate was reclaimed, clinician efficiency improved and costs were reduced.

Forms management is far simpler. A staff of seven forms designers was cut to just one person and the elimination of daily forms updates to dozens of printers has freed up IT support staff for more urgent needs.

Barcoding has greatly improved clinician efficiency. In the pharmacy where orders were previously keyed in by hand, barcode automation has eliminated 95 percent of an average day's 18,000 keystrokes.

With all Lexmark devices using the same toner cartridge family, only a very small inventory is kept on site. No longer are thousands of dollars tied up in an inventory of different cartridges, sometimes for devices the hospital no longer owned.

With the project complete, Lexmark still remains dedicated to St. Joseph's business and patient care objectives. “Our account representatives check in with us weekly,” said Perry. “When we call with an issue, we get answers quickly. We have such a dedicated and responsive team.”

At St. Joseph's Mercy Health Center, patient care will always remain the top priority. Making sure that care is delivered quickly, safely and accurately requires a cohesive information management system. Centralized forms management and MFP technology from Lexmark is precisely what the doctor ordered.