Case Study

OhioHealth
Improves Patient Safety with Processes and Advanced Technologies

OhioHealth is a not-for-profit healthcare system comprised of eight member hospitals, six affiliate hospitals and 30+ ambulatory facilities. One of Ohio's largest healthcare systems, OhioHealth is known regionally for its care of patients with cardiovascular, neurological and orthopedic conditions. In addition, OhioHealth has received an array of awards, including: Magnet Recognition from the American Nurses Credentialing Center; listings in *U.S. News & World Report*'s Best Hospitals; and recognition as one of the "Most Wired" by *Hospitals and Health Networks.*

Delivering the highest-quality care in a timely and efficient manner has always been paramount at OhioHealth. Not surprisingly, the premier healthcare provider has leveraged the use of information technology (IT) for years. OhioHealth partnered with McKesson to implement a broad range of Horizon Clinicals® solutions to help ensure greater safety in its medication and laboratory processes. With these solutions, the health system has reduced medication errors by 92% overall, decreased the incidence of mislabeled blood specimens by 98%, and cut patient-identification errors by 20%. In addition to improving safety, OhioHealth has saved more than $400,000.

Challenges

Quality care is a hallmark of OhioHealth, an eight-hospital system based in Columbus, Ohio. So when news of medication errors began to permeate healthcare and consumer media years ago, the health system's board members took notice.

"Patient safety has always been an important issue and has become even more pressing as the topic has appeared in the media during recent years," says Michael Krouse, senior vice president and CIO.

As a matter of fact, the issue became so important that board members decided to give the medication and lab safety initiative precedence over other planned projects.

"We've always placed a high value on improving patient safety, so it came as no surprise when our governing board decided to prioritize the deployment of bar-code medication administration ahead of other projects and applications," says Suzanne DeWoody, MS, RN, vice president, Systems Integration.

OhioHealth had already successfully implemented many McKesson technologies, so the decision to extend the partnership into the patient safety realm was a given, DeWoody notes. The challenge, however, was in the scope and high-reaching objectives of the medication and lab safety project.

"The scale of the project was very large, spanning three hospitals and 46 nursing units," says DeWoody. "To be successful, we had to standardize operations and technology implementations organizationwide, a first for our health system."

Answers

OhioHealth leaders knew that technology alone could not improve

patient safety. To effectively reduce medication and laboratory errors, management had to first examine the processes involved in medication and lab administration, understand how each hospital was handling these processes, and identify what had to change. The key to success lay in creating the zeal that would get all clinicians using the technologies.

OhioHealth leaders felt that such buy-in was so important they established compliance goals, including:

- Adding bar codes to 100% of medications dispensed from the pharmacy

- Administering 95% of inpatient discrete medication doses using bar-code scanning

- Requiring that 100% of physicians use a closed-loop medication process

- Maintaining 100% compliance with Ohio Board of Pharmacy requirements for positive patient identification

Tapping Clinical Expertise

OhioHealth signed up for McKesson's Clinical Consulting Services, an offering designed to optimize clinical product performance through process redesign, standardization and change management. The consultants worked alongside OhioHealth managers to form a team of clinical representatives from each hospital and discipline involved in the medication and lab safety process — including staff members from nursing, pharmacy and respiratory therapy. Most important, the team included staff members from each tier of the organization.

"We wanted everyone who touches the medication and lab administration processes to have a say in the improvements," DeWoody explains. "For example, we had nurse managers, nurses and nursing assistants on the team. The people working with patients are the ones who really know what changes are needed."

The team developed process maps that outlined current workflow and then evaluated suggested improvements. It also developed detailed spreadsheets that outlined each process step and then ranked them in order of what needed to change the most.

The team then came to a consensus on what the new standardized process would be and set the expectation that there would be no tolerance for diversion from that point forward. The ultimate goal was to find the best practice for each process and establish a means to reach the desired target.

"It was not necessarily a democracy, and the largest hospitals did not get to control the process," DeWoody says. "Instead, we discussed each issue in detail and examined the literature to determine the best way to do things."

Standardizing Care

With standardized medication and lab administration processes in

place, the clinical consulting team then worked with OhioHealth to leverage the use of IT to bring about the desired results. More than 3,000 staff members were trained by McKesson instructors prior to the go-live of the pharmacy information system, the bar-code medication administration solution and the lab information system.

Finally, OhioHealth deployed a system to electronically capture and store patient-specific documents and information across the enterprise. Combined with McKesson's physician portal, a Web gateway that provides secure access to patient information, physicians can electronically view, complete and sign-off on patient charts — whether in the hospital, office or at home.

In addition, OhioHealth's newest hospital, the all-digital Dublin Methodist, took medication safety a step further by implementing Horizon Expert Orders™, McKesson's computerized physician order entry (CPOE) system. This solution closes the medication safety loop by enabling electronic ordering and helps caregivers reduce the potential for errors. With electronic orders, Dublin practitioners are eliminating prescribing errors tied to illegible handwriting, enabling faster turnarounds in medication delivery, and managing patient care in accordance with evidence-based guidelines and standards. The other OhioHealth hospitals are expected to follow Dublin's footsteps and implement CPOE in the next few years.

Results

The technology deployment and comprehensive approach to patient safety has helped OhioHealth gain the buy-in of clinicians across the enterprise, as evidenced by the quick realization of high compliance rates. The health system achieved 97% compliance in scanning medications and an almost 100% reduction in medication errors related to patient, medication, dose and route. In addition, OhioHealth has reduced medication errors by 92% overall through process redesign and use of McKesson's point-of-care medication administration application.

Perhaps most important, medications are now administered via a closed-loop system that also enables them to be captured and charted electronically at the bedside. With Horizon Admin-Rx™, nurses scan and verify the "five rights" – right patient, right drug, right dose, right route and right time – prior to administering medications. The system also ensures records are legible, timely and immediately accessible to authorized caregivers.

With Horizon Lab™, the health system has eliminated transfusion errors while decreasing mislabeled blood specimens by 98%. It also reduced patient-identification errors by 20% and eliminated duplicate lab orders. Automating lab processes has resulted in $310,000 in labor cost reductions, primarily by avoiding unnecessary rework. Additionally, the health system has captured $100,000 in revenues that would have been missed using the former processes.

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> *Vice President*
> *Systems Integration*
> *OhioHealth*

The systemwide emphasis on patient safety has created a culture that encourages clinicians to use technology at every turn to improve care. As a result, OhioHealth has also:

– Eliminated virtually all medication dispensing errors through the use of a pharmacy robot

– Developed a solution that meets the Ohio State Board of Pharmacy positive identification requirements

– Enhanced clinician satisfaction as evidenced by staff surveys showing that doctors and nurses believe technology has led to improved patient care and safety

While these patient safety and bottom-line improvements might not make the evening news – as medical errors are apt to do – it's the kind of news OhioHealth leaders wanted to gain from the project.

"We remain steadfast in our long-held commitment to patient safety and have focused our efforts on implementing technologies that will reduce medication and lab errors," Krouse concludes.

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