Off-Hours Coverage for Three Area Hospitals

By Paul A. Bauman, PharmD, and Tari Brink, CPhT

A MEMBER OF THE ADVENTIST HEALTH SYSTEM, SONORA REGIONAL MEDICAL CENTER (SRMC), in Sonora, California, chose an electronic solution for medication order management while developing a telepharmacy program with three other hospitals – Selma, Central Valley, and Hanford – in our system. Our goal was to gain the benefits of 24-hour pharmacy service by processing all off-hour orders at one site.

One of the essential parts of our plan was to utilize a paperless order management program as a telepharmacy system during off hours. Upon evaluating several systems, we found POMS from Integrated Informatics, Inc., to be cost-effective, and it provided several important functionalities. The user interface of POMS is browser-enabled, and POMS supports IP scanners, as well as fax machines, and can concurrently support multiple pharmacy information systems, making it ideal as a telepharmacy system.

POMS was installed at SRMC, Selma, Central Valley, and Hanford in August 2006. During the off-hours, pharmacists located at SRMC use POMS to process orders from Selma, Central Valley, and Hanford hospitals. With a server at SRMC, POMS is interfaced with our Cerner Millenium Pharmacy Information System.

POMS recognizes the medical record number bar coded on the order requisitions, and uses that number to obtain demographic information from a database built from an ADT HL7 feed. POMS recognizes STAT orders using optical character recognition. Upon receiving off-site orders, the SRMC pharmacists’ work-queues are populated with entries, each of which shows the hospital and the nursing unit from which the orders came, the demographic information of the patient, and the priority of the order. POMS presents SRMC’s pharmacists with orders sorted first by priority and then the time of arrival.

Our installation of POMS was smooth. In fact, we went live in 10 days, from start to finish. We are now able to easily track and communicate orders across our off-site units, and off-site clinicians feel comfortable with the fact that orders are processed by pharmacists, albeit off-campus. While POMS has helped us comply with the new JCAHO requirement for pharmacy review of physician orders, we also found that going paperless was a huge space-saver. Furthermore, we have reaped the added benefit of tracking order problems, clarifications, and pharmaceutical interventions with the POMS program. In summation, the improved pharmacy workflow efficiency at SRMC and enhanced patient safety across the four hospitals are much appreciated by our staff.

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24-Hour Pharmacy Services in a Small, Rural Hospital

By Paul D. Moore, DPh

LOCATED IN ATOKA, OKLAHOMA, ATOKA MEMORIAL HOSPITAL (AMH) IS a 25-bed critical access hospital with an average daily census of nine to 10 patients. Prior to implementing MDG Medical’s ServeRx System in 2003, AMH had not purchased any medication-use automation, primarily because the costs of those systems were prohibitive for a hospital of our size. Furthermore, as a small, rural hospital we do not have an IT department, and the level of computer and technical resources needed in programming databases and interfaces left our staff feeling overwhelmed. We had previously tried to implement CPOE and failed, so naturally, when MDG introduced us to their system, my first question was, “Is it truly ‘plug-n-play’?” We found the system’s operation to be very straightforward, and we were very pleased with the level of orientation and training we received from MDG.

We use MDG’s single-tower night cabinet system in our emergency department for in-house ER use and pre-dispensed outpatient prescriptions for the patients to use after-hours until the local pharmacy is available. For our inpatient operations, we use the full MDG ServeRx system, with two towers and a cart. Both systems provide 24-hour medication accessibility.

Upon receiving an order for a patient, the written order is scanned to a console for review by a remote pharmacist, and the details of the order are entered by the nursing staff into the ServeRx system. The pharmacist reviews the order for appropriateness, allergies, potential drug interactions with other medications, and other clinical parameters. In addition, the pharmacist checks for order entry accuracy. For our inpatient medications, upon approval of the order by the pharmacist, the order may be deployed to the Smartcart medication pass cart, as scheduled for administration. When it is time for the medication pass, the nurse “un-docks” the cart from the system, rolls it to the patient’s room, and proceeds to administer the medication to the correct patient.

Regarding a reduction in medication errors, our experience reflects the same findings as published research: When you utilize automation and involve the pharmacist in the process, medication error rates fall dramatically. Prior to implementing the ServeRx System, we assumed we had just a few medication errors each month. However, after implementing the system, we discovered that we were averaging around one medication error a day. Now, these errors are being caught before they reach the patient. We have also found the system to be relatively inexpensive to operate. Based on our lease cost and maintenance fees, the system costs us about $1.88 per hour. When you think of the additional margin of safety it lends to our medication management model, it is extremely cost effective.

Shortages in pharmacy and nursing staffs are putting pressure on health care institutions to look outside of personnel for solutions to providing 24-hour pharmacy coverage. Based on our positive experience with MDG’s automated products, I would encourage my colleagues to embrace technology to solve these issues. Seek cost-effective solutions that are consistent with your needs and financial means. Look for products and services that allow you to do more with fewer personnel. As for AMH, we are in the process of building a new facility that will provide more physical space for medication management. We hope to purchase additional ServeRx towers in order to increase our storage and distribution capacity for medications.

Paul D. Moore, DPh, has worked in pharmacy for nearly 30 years. Currently a consultant pharmacist with Atoka Memorial Hospital, he served as the chief executive officer of the Atoka County Healthcare Authority from 1998 to 2002. He received his BS in pharmacy from Southwestern Oklahoma State University. 

REFERENCES:

WHERE TO FIND IT:
MDG Medical .................. Circle reader service number 51 or visit www.mdgmedical.com

Reducing Order Entry Time with a Physician Order Management System

By Kathy Manfull, RPh, MHA

ST. VINCENT HEALTHCARE IS A 314-BED MEDICAL CENTER SERVING South Central and Southeastern Montana and Northern Wyoming. During a 24-hour period, our pharmacy staff, totaling 40 FTEs, processes an estimated 1,700 physician orders. Before automating the physician order management process with Omnicell’s OmniLinkRx physician order management system in June 2005, our 24-hour central pharmacy employed a manual system with an average order entry time of 30 to 60 minutes per physician order.

Prior to implementing OmniLinkRx, during the day, three decentralized pharmacists would round and process physician orders on the nursing units or go back to their satellite pharmacies and complete order entry from the yellow NCR order copies. When the decentralized pharmacists went home for the day, the nurse or ward clerk would need to fax orders to the main pharmacy.

In the evening, the pharmacists would process the orders from the central pharmacy and during the night one pharmacist would continue the process as orders were faxed in. As you can imagine, this was very time-consuming, and if the fax machine was down or if the pharmacist got called away to a nursing unit, order processing time could take much longer.

With the implementation of 15 OmniLinkRx senders, we had two distinct goals:
- to get rid of the carbon copies, which were often hard to read
- to have access to the original physician order to reduce pharmacist errors during the order entry process

The decrease in our order entry time since implementing OmniLinkRx has been an added bonus. The average order entry time now ranges from 12 to 13 minutes, down from 30 to 60 minutes.

Today, we have a total of 19 OmniLinkRx senders, with new sending units added
in the cardiac cath lab, outpatient surgery, and the emergency department, helping us comply with JCAHO’s requirement for pharmacist review of physician orders. Now our pharmacists can perform the reviews and quickly process the orders for those areas, which pleases our nurses and physicians as well.

Since the original physician orders are now digitized and sent directly to the central pharmacy, a pharmacist can be confident that orders are being tracked and processed – especially the STAT orders – while they are providing patient education, completing medication reconciliation, or providing other clinical services. This has been wonderful, allowing the decentralized pharmacists to handle orders while remaining connected to their patients in their clinical role and providing patient education. In addition, OmniLinkRx’s digital orders are much easier to read than paper copies of physician orders. We can even zoom in to clarify a doctor’s handwriting, resulting in fewer calls to the nursing unit or to the physician’s office.

OmniLinkRx also allows nurses to monitor and track how well the pharmacists are responding to physician orders. They can review the order online, see it in process, and find out who handled order entry and when the medication will be available for patient. This technology has helped to decrease phone calls between nursing and pharmacy, because the information is available online for their review. We also are doing more system audits allowing nurses and pharmacists to collaborate on ways to improve patient care.

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WHERE TO FIND IT:
Omnicell, Inc. .................. Circle reader service number 52 or visit www.omnicell.com

Achieving 24/7 Coverage
With a Medication Order Transmission System
By Steve Sundberg, PharmD

BASED IN THE CHICAGO SUBURB OF PARK RIDGE, ILLINOIS, ADVOCATE
Lutheran General Hospital is a nationally renowned, 608-bed, tertiary-care hospi-
table. Because ensuring medication safety is a key institutional goal, our medication management system combines clinical services and automation, allowing us to provide the best possible care for our patients. We have a hybrid drug distribution model in place, with McKesson’s ROBOT-Rx system performing daily cart fill and first-dose dispensing functions. Three MedCarousel units are used to fill automated medication cabinets on the nursing units with narcotics, floor stock medications, and IV solutions. Bar code packaging for oral solids is performed by the ROBOT-Ready PACMED high-speed packager.

While automation has paid handsome dividends for medication distribution, in 2002, we realized that we needed to upgrade our medication order processing procedures. At that time, order entry occurred in the central pharmacy or in old satellite space in patient care areas. The decentralized pharmacists completed unit rounds every hour to pick up physician orders. In many cases, urgent orders could sit for an extended period of time. During nighttime hours, nurses sent orders via a tube system to the central pharmacy. This system made it difficult to prioritize orders and created workflow bottlenecks in the pharmacy. It also caused nurses to place repeated follow-up calls to the pharmacy for status updates, especially when orders were delayed by misplaced paperwork, illegibility problems, or order overrides.

While we were not quite ready for CPOE, we knew we needed to make a change. After considering several options, we implemented a dependable fax-based imaging system from McKesson. The Web-enabled system increases the speed and accuracy with which pharmacy orders are communicated between the nursing unit and the central pharmacy, and it also enables 24/7 coverage.

With the McKesson order transmission system, physicians continue to write medication orders on paper order forms. Nursing unit clerks scan or fax the orders using installed fax machines. Each order is electronically time stamped, assigned a tracking number, and transmitted to the pharmacy viewing station. Units are able to select the appropriate priority (STAT, ASAP, or routine) by using one of the preprogrammed speed-dial buttons. Decision support software in the McKesson system streamlines the order process and provides a comprehensive medication order trail. Five viewing stations are located on nursing units and another is located in the OR satellite. In the central pharmacy, there are five viewing stations; four are for order entry, and one is used by the pharmacy director and information systems coordinator. Two additional stations are available as needed for order entry or training.

The McKesson system’s remote access features are particularly appealing, as three of the eight hospitals in the Advocate system are not open at night. With the order transmission system in place, midnight pharmacists at Lutheran General can provide order review and entry for nearby Advocate hospitals that do not have 24-hour pharmacist coverage. This enables us to be more flexible in addressing workflow, such as allowing pharmacists to work from home in select situations.

The system’s user interface also encourages productivity. Before the implementation, when a decentralized pharmacist was swamped with orders, other pharmacists were not aware of it. Only rarely did a pharmacist call for help. Since implementing the McKesson system, we have found that pharmacists are viewing the “general inbox” after finishing work on their assigned units. Without being asked, they are verifying orders for busy units.

Lutheran General utilizes the quality assurance data collected automatically by the McKesson system to further improve pharmacy communication with physicians and nurses. For example, orders with inappropriate abbreviations, poor handwriting, or trailing zeros are flagged. Twice weekly, we send reports to medical department chairpersons for peer feedback. Likewise, nurse managers receive reports of orders that were faxed late, had wrong patient labels attached, or were sent via the STAT or ASAP route inappropriately. From a patient-safety and workload perspective, we were able to identify problems and start solving them in a real-time fashion, and this is very gratifying for the pharmacy staff. Today, we are about 40% migrated to a CPOE system. The McKesson order transmission system helped position us for this next step by aiding us in establishing best practices, improving productivity, and redeploying pharmacists to more clinical activities.

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WHERE TO FIND IT:
McKesson Automation ........ Circle reader service number 53 or visit www.mckessonautomation.com