REMOTE PHARMACY

Telepharmacy Continues To Take Hold

When administrators at Saint Luke's Health System, based in Kansas City, Mo., launched a telepharmacy program this winter to provide overnight pharmacy coverage to six of its medical centers, they joined a growing number of institutions across the country using remote pharmacy systems in some capacity to provide continuous care.

Fueled in part by a mandate from the Joint Commission that pharmacists prospectively review all medication orders and in part by an ever-increasing shortage of pharmacists, telepharmacy is "a trend that is becoming more and more of a practice," said Anthea Francis, RPh, director of the American Society of Health-System Pharmacists (ASHP) Section of Inpatient Care Practitioners. "I can't imagine this is going away."

Remote pharmacy services have been crucial in maintaining or restoring pharmacy services to rural areas, where health care institutions may not be open 24 hours or may have particular difficulties recruiting pharmacists, Ms. Francis said.

Although ASHP does not maintain a list of all telepharmacy programs, the boards of pharmacy in about 16 states, including North Dakota, Alaska, Idaho, Illinois, Montana, South Dakota, Texas, Utah, Vermont and Wyoming, all have amended their laws within the past few years to allow remote pharmacy services.

For Saint Luke's, the decision to start the "ePharmacy" was multifactorial, addressing staff needs, budgeting and patient safety, explained Doug DeJong, RPh, senior director of pharmacy at the health system.

Before the launch of ePharmacy, overnight pharmacy coverage was provided by pharmacists at one of the Saint Luke's hospitals. "As patient volumes and patient acuity levels grew, the workload warranted dedicated resources for that facility, and we began to look at options for the other campuses," he said. "We also wanted to be able to start expanding services to our facilities outside the metro area."

The health system already had a centrally located remote intensive care unit (ICU), so Mr. DeJong hired a team of pharmacists specifically for overnight coverage and based them within the eICU, to piggyback on existing technology and to provide neutrality so that all six sites would be seen as equal-priority customers.

Within their system, physician orders are scanned to the pharmacist on duty at the ePharmacy. That person reviews the orders and enters them into the computer system, screening for potential drug interactions and performing other clinical activities as an on-site pharmacist would. Entering the order into the computer system allows nurses to remove the medication from automated dispensing cabinets located at the individual hospitals. The facilities also have an on-call pharmacist available should the need arise.

The service has been popular, with the e-pharmacists handling an average of more than 333 medication orders and more than 20 phone calls per shift. Feedback so far has been "very, very positive," Mr. DeJong said.

"Within the metro area hospitals, the medical staff has come to expect 24/7 coverage, and so it's seamless," he added. "For smaller hospitals in rural areas, they really appreciate having someone to fill orders, check over prescriptions, etc.
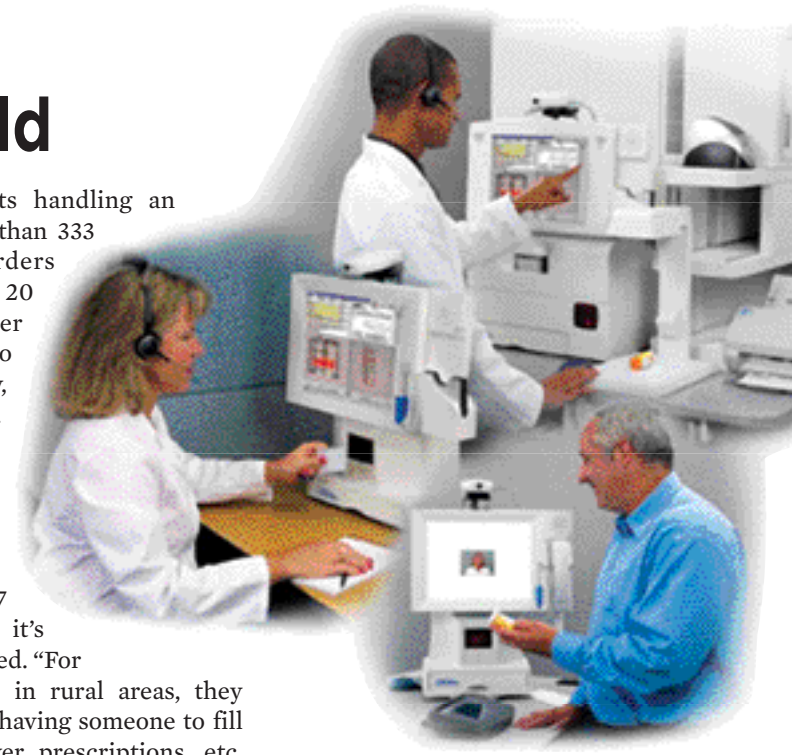
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Mr. DeJong said the ePharmacy has additional benefits. For one, it is cost-efficient. Outside labor, the expenses were minimal—less than $3,500 per site to put in a computer workstation, scanner and fax machine. In addition, the service adds a layer of safety by reducing potential medication errors.

"If we tried to put a 24-hour pharmacist in each location, it would be prohibitively expensive," he said, but with the members of a central team applying their skills to multiple locations, the overhead costs are spread across several facilities.

The North Dakota Experience

Another relatively low-cost telepharmacy system—one deployed in North Dakota—has helped provide pharmacy services to thousands of rural citizens since 2002. The North Dakota Telepharmacy Project, which is a collaboration of the North Dakota State University College of Pharmacy, Nursing and Allied Sciences, the North Dakota Board of Pharmacy and the North Dakota Pharmacists Association, came about when the state board of pharmacy determined that 26 community pharmacies had closed in the 1990s and 12 more were threatening to close, said Ann Rathke, telepharmacy coordinator at the college.

As of September 2008, 72 pharmacies were involved in the project, including 24 at central sites and 48 at remote sites.

Of those, 51 were retail pharmacies and 21 were hospital pharmacies. Through the project, approximately 40,000 rural citizens saw pharmacy services restored, retained or established. For example, the town of Enderlin, located 90 minutes outside Fargo, had no pharmacy services for about 18 years before telepharmacy, Ms. Rathke said, so that patients had to drive a minimum of 30 minutes each way to get their medications.

"Communities like that are thrilled when they can have their services restored or maintained," she noted.

In this network, patients take prescriptions to their local telepharmacy site and give it to a registered pharmacy technician, who prepares the prescription for dispensing by a licensed pharmacist at a distance. The pharmacist reviews the patient's medication profile for drug interactions and other potential problems before examining digital pictures of the completed prescription for accuracy via videoconferencing equipment. Once the pharmacist has approved the prepared prescription, the pharmacy technician brings the patient to a private consultation room for video counseling by the pharmacist on proper use of the medication.

"There is that real-time, face-to-face interaction between the pharmacist and the tech, and the pharmacist and the patient," Ms. Rathke said.

Most telepharmacies in the system are full-service sites with a complete inventory of prescription and nonprescription drugs, although some, called

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An ePharmacy Checklist

Think telepharmacy may be right for you? Ann Rathke, telepharmacy coordinator at North Dakota State University College of Pharmacy, Nursing and Allied Sciences, and Doug DeJong, RPh, senior director of pharmacy at Saint Luke's Health System in Kansas City, Mo., offer the following tips:

- Contact your local board of pharmacy to determine the rules regarding telepharmacy in your state.

- As early as possible, cooperate with state agencies or partner with other organizations that also have an investment in increasing pharmacy services in your area.

- Try to standardize computer equipment and software for all of your planned sites to ensure a smoother process or faster connectivity. It also helps to have a standard formulary.

- If you are planning to use telepharmacy for overnight or holiday coverage, set up a good communication system between your after-hours and regular pharmacists. At Saint Luke's, the overnight pharmacists have created a communication tool to record any issues occurring during the night that require follow-up, so regular pharmacists reporting for duty in the morning can take over.

Resources

- North Dakota State University has a "how-to" guide for telepharmacy on its Web site: http://www.ndsu.edu/telepharmacy.

- Vendors that provide telepharmacy computer systems include ScriptPro (http://www.scriptpro.com), AmerisourceBergen (http://www.telepharmacys-olutions.com), CardinalHealth (www.cardinal.com), E-PharmPro Inc. (www.epharmpro-inc.com), Envision Telepharmacy (www.envision-rx.com) and Metabolyst Healthcare Solutions (www.metabolyst.com).

consultation sites, link with a nearby pharmacy and receive medication deliveries. In the hospital models, registered pharmacy technicians prepare medications, which are checked by a remote pharmacist via audio and video computer links before being dispensed to a patient. Some hospitals have the video equipment on mobile carts, which can be wheeled to the nurses' stations or into patients' rooms if necessary.

Costs for the participating pharmacies are relatively small, Ms. Rathke noted: a computer system and monitor for about $2,000; a high-definition document imaging camera for about $1,200; a video conferencing system (they use Polycom), at about $11,000 per unit; and DSL or T-1 line charges of about $250 to $800 per month. Ms. Rathke said they also have firewalls to protect patient privacy and fulfill HIPAA regulations.

Evidence That ePharmacy Works

Published studies indicate that telepharmacy programs are effective. A survey of patients treated through a small telepharmacy program run by the Community Health Association of Spokane, Wash., showed that more than 75% of patients seen at the remote sites were satisfied with their videoconference interactions with the pharmacist, and a high percentage of patients at both the base site (94%) and remote sites (63%) agreed that they would have difficulty affording their medications without this program.[1] And a 2008 study from Aurora Health Care in Milwaukee demonstrated that implementing a remote ICU pharmacy service for its 13-hospital health system provided consistent pharmaceutical care for patients while minimizing costs.[2]

Telepharmacy also can be profitable. Ms. Rathke and colleagues assessed the financial operation of a single business unit, consisting of one central retail pharmacy and two remote retail telepharmacies, by analyzing income statements and balance sheets for three consecutive years (2002-2004). They found that despite some concern about the low rate of inventory turnover, the gross profit increased from $260,093 in 2002 to $502,262 in 2004.[3]

Pharmacists who do not want to build their own remote pharmacy system can turn to vendors such as Script-Pro or AmerisourceBergen (sidebar) and/or hire staffing agencies that provide remote pharmacist oversight. According to Mike Coughlin, president and CEO of ScriptPro, the company now has some 5,000 customers worldwide, including the U.S. Navy and Veterans Administration.

"Our concept is that the system should be part of the overall pharmacy work flow," Mr. Coughlin said.

"There are so many different ways it has proved useful."

For example, when the town of Adrian, Minn., where 40% of the citizens are seniors, was faced with the loss of its only pharmacists, it found a technician for a local pharmacy, signed up for the company's telepharmacy products and contracted with a regional drug chain to provide pharmacist oversight. And at the University of Kansas, its systems are being used to allow pharmacists to supervise technicians in the preparation of sterile compounded medications.

Pharmacies that already have Script-Pro's Central Workflow System programs in place can add telepharmacy sites for about $15,000 to $20,000, Mr. Coughlin said, whereas new customers may pay $50,000 to $75,000 to get the basic servers in place. He added that the prices include full technologic support, including planning, training and setup and maintenance of the products, which free pharmacists to focus on their specialty.

"Telepharmacy is a lot more than a videophone or a vending machine," Mr. Coughlin said. "It's a systematic way of operating the remote dispensing process under the control of a pharmacist."

—Karen Blum

References

1. Clifton GD, Byer H, Heaton K, Haberman DJ, Gill H. Provision of pharmacy services to underserved populations via remote dispensing and two-way videoconferencing. *Am J Health Syst Pharm*. 2003;60:2577-2582.

2. Meidl TM, Woller TW, Iglar AM, Brierton DG. Implementation of pharmacy services in a telemedicine intensive care unit. *Am J Health Syst Pharm*. 2008;65:1464-1469.

3. Khan S, Snyder HW, Rathke AM, Scott DM, Peterson CD. Is there a successful business case for telepharmacy? *Telemed J E Health*. 2008;14:235-244.