

## **Systems, Technologies Produce Excellent Medication Safety Record at CKHS**

by Grant Gegwich

Nearly every patient who walks through the doors of a CKHS hospital receives some form of medication. The goal of each hospital is to ensure that every patient receives the correct medication, in the correct dosage, at the correct time.

Achieving that goal, of course, is not as easy as it may seem. Consider the sheer volume of the task: In 2000, the physicians, pharmacists and nurses of the Crozer-Keystone Health System ordered, dispensed and administered approximately 3.5 million doses of medicine of all forms. Then there's the complexity of the medicines being administered: Twice as many drugs are available now compared to 1990. Throw in the challenge of making sure that every CKHS hospital is following the same rules and policies, and the goal begins to seem downright unattainable.

But Edward Casey, director of CKHS Pharmacy Services, is proud to report that the physicians, nurses and Pharmacy staff are getting closer and closer to meeting this goal. By streamlining systems, integrating the latest technologies and learning from mistakes, CKHS has developed a strong record in the area of medication safety in recent years. In fact, the hospitals are doing such a good job that the health system has received recognition four times in the past five years from the Voluntary Hospitals of America for its innovative efforts to improve efficiency and to ensure that patients are getting their correct medications. According to Casey, these awards are a reflection of the combined hard work of Pharmacy Services, the Pharmacy and Therapeutics Committees, the Home Care Departments, nurses and physicians. CKHS has enhanced its performance in this crucial area by first focusing on those policies affecting every patient, such as the basic system for dispensing medications.

Since 1995, CKHS has used sophisticated Pyxis™ machines to store and dispense medications. These machines, located in nursing units throughout the health system's hospitals, have streamlined the traditional system of delivering a medication in which a physician writes an order, the pharmacy reviews and dispenses it, and the nurse delivers it to the patient. The Pyxis™ machines provide nurses with direct, convenient access to medications as well as the ability to track the distribution of those medications to each of their patients. The machines are able to show dose calculations, alert nurses of potential problems and give all health care professional drug information that can be used to help the patient and the caregiver. Casey estimates that the machines have helped cut the average time it takes a prescription to go from a physician's written order to the unit for administration to the patient from four hours to roughly an hour and a half.

"The Pyxis™ machines have provided us with more security, accountability and efficiency," Casey says. "One of the reasons the Pyxis™ machines have been so successful is because we were very careful about implementing them correctly. When the machines were installed, we had significant nursing involvement and Pharmacy and Therapeutics Committee involvement."

Keeping everyone on the same page — and finding the best way to do something in the process — is a theme that can be found throughout the efforts of Pharmacy Services. One of the VHA awards, for example, was given to CKHS for its program to standardize the IV system across the health system. Similar standardization efforts were made in the focused areas, such as anesthesiology.

"We firmly believe in the best-practice model. Whatever system works best, that's what we try to do. For instance, we use Crozer's model for distribution, but we use DCMH's medication labeling format. All of the hospitals contribute to make it work more efficiently and accurately," Casey says.

To keep up with changes in drugs and their uses, Casey and his staff scour pharmaceutical publications and Web sites for news about new drugs and discoveries, medication errors and best practices. Pharmacy Services then passes on the information to all relevant employees by placing updates in CKHS's three physician newsletters (*Monitor*, *PPN* and *Scope*), regularly attending nursing and administrative meetings, and printing a formulary each year of all of the drugs approved for use in the hospitals, as well as their protocols and guidelines.

Casey knows that no matter how sophisticated the technologies are, or how efficient the system is, medication errors and "events" (when a potential error is caught before reaching a patient) are bound to happen. But Pharmacy Services is working to make sure that CKHS personnel learn from their mistakes.

The department, working with the hospitals' Pharmacy and Therapeutics committees and Quality Monitoring departments, has standardized the process for reporting errors and events, and worked to reduce the stigma attached to admitting to a mistake.

"Our reporting has really gone up. People sometimes think that they have to hide mistakes. But I believe that the more we know, the better," says Casey, who acknowledges that most medication errors are not dangerous to the patients. "Reporting helps us learn how to do something better, so that the mistake does not happen again."

Above all, Casey knows that medication safety is something that requires consistent dedication from all employees involved. "The most important thing to remember is that it's an ongoing process. You can't just flip a switch some day and say 'we're safe,'" he says.