

feature: Telepharmacy Improves Safety in Chemotherapy Preparation

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The University of Kansas Hospital's use of ScriptPro's Telepharmacy brings added safety to the preparation process for chemotherapy medications.

The University of Kansas Hospital's decision to implement telepharmacy in the chemotherapy preparation room in July 2007 has demonstrated safety improvements.

Because there is no specific technology available for chemotherapy preparation, the Kansas City-based hospital turned to ScriptPro Inc. In March 2007, the hospital met with the company about using their telepharmacy product in the chemotherapy preparation area, and ScriptPro modified the system to meet the particular needs in the pharmacy department.



"Given it didn't exist in a form to meet our needs, it was a quick turnaround from March to July," said Brian O'Neal, MS, PharmD, assistant pharmacy director at the hospital. "The system is easy to use and the staff was trained in a week."

Preparation of chemotherapy medications is one of the highest risk practices in hospital pharmacies. Selecting the right drug, drawing up the appropriate volume, and injecting it into the intravenous (IV) bag for the correct patient are critical. A pharmacist is required to oversee the process. Yet, with limited pharmacist resources and the complications of clean room operations, step-by-step oversight is generally impossible.

Pharmacist oversight at the University of Kansas and other hospitals involves verifying the chemotherapy preparations using the syringe pull-back method. In the isolated chemotherapy preparation room, a technician fills the syringe with medication and injects it into the IV bag. After the fact, the technician pulls back the empty syringe to show the pharmacist how much medication was injected.

The implementation of ScriptPro's Telepharmacy improved the process for the 508-bed hospital, which has 125 to 150 chemotherapy drugs go through the pharmacy system a week. Working with ScriptPro, the pharmacy administrators placed a telepharmacy inspection camera to take digital images at various stages of the chemotherapy preparation process in a biological safety cabinet in the clean room. First, the technician scans the bar code on the vial. Then, the technician takes photos of the work label, the vial, the fluids being used, and finally, the syringe, before injection into the bag. A pharmacist views the images from a check station when verifying the finished product.

"It [the system] allowed us to get the safety benefit we wanted while still allowing the pharmacist to see everything," he said. Plus, it allows "us to keep our clinical pharmacists on the floor as part of a multidisciplinary area."

Dr. O'Neal and his colleagues authored "Innovations in Chemotherapy Preparation Safety: Use of Telepharmacy and Barcode Technology in the IV Admixture Area," which won a 2007 American Society of Health-System Pharmacists Best Practice Award in Health-System Pharmacy.



The paper documented the telepharmacy process and the outcomes after 1 month of using the system. The process demonstrated safety improvements in 4 main areas:

- Verifying chemotherapy products with bar code technology helped ensure that the correct drug was selected
- Inspecting photographs of the syringe before it was injected into the bag of fluid increased the likelihood of detecting technicians' errors
- Digitally enlarging the small font of the chemotherapy vials helped pharmacists accurately check the finished product
- Disposing of contaminated syringes and vials in the chemotherapy preparation area reduced the risk of contaminating other areas of the clean room

During the data collection period from July 1, 2007 to July 31, 2007, the use of telepharmacy and bar code technology resulted in a pharmacist's intervention in 4 of 363 prepared doses.

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