

Long-Term Care Survey Alert

CASE STUDY: Computer Technology Aims To Error-Proof The Medication Process

Government-funded study focuses on electronic MARs in nursing homes.

The federal government wants to know how computerized systems might improve medication safety in nursing homes--and it may soon be counting the ways.

An ongoing **Agency for Healthcare Research & Quality**-sponsored study using the OneTouch System electronic medication administration record (EMAR) in nursing homes may shed some light on how an automated system can eliminate all of the things that can go wrong with administering meds.

The OneTouch system includes an EMAR on a touch screen on the medication cart that the nurse brings to the bedside to administer medications, explains **Jill Scott-Cawiezell, PhD, RN**, a lead investigator in the study and assistant professor with the **MU Sinclair School of Nursing** in Columbia, MO. "The electronic system pulls up only the medications the nurse needs to administer for that particular time slot, including any follow-up need for a PRN," she says. "Late medications are outlined in red."

Another feature: "You can load physician orders [for the nursing staff] to check the pulse or blood pressure before giving a medication. The nurse then records the vital sign before administering the medication," says Scott-Cawiezell.

While the study is still in progress, Scott-Cawiezell sees where the electronic system has "many attributes that improve the safety of med passes in nursing homes." For one, paper MARs tend to be very messy documents with many cross-outs and yellow highlighted medications, she notes.

Upgrade Includes Pharmacy Interface

The new OneTouch electronic medical record system version scheduled for release in early 2006 will include an electronic pharmacy interface that sends the medication order to the pharmacy electronically along with other patient information. "The pharmacy will send back a confirmation with an electronic version of the bar code in encrypted form and put the same bar code on the package," explains **Robert Davis, CEO of OneTouch Technologies** in Irvine, CA, which produces the system.

When the nurse administers the medication, she will use a portable reader to compare the electronic bar code to the package bar code to verify she's about to administer the correct medication for that patient for that time of day, Davis says.

If the pharmacy sends a package with a bar code that doesn't match, the nurse would stop and recheck that she has the intended medication. "If a medication order is sent to the pharmacy and the pharmacy sends back a confirmation with a medication of a different class, the system will detect it and reject the pharmacy's confirmation," explains Davis.

The upgraded OneTouch system will also include a patient identification system that uses radio frequency identification technology to identify patients. RFID tags imbedded on patient wristbands emit a low-frequency radio signal communicating the patient's unique ID information, which is actively obtained by the nurse using a special scanner held very close to the patient's wristband.

"The caregiver will scan the patient's wristband before administering the medication--and match that to the bar code on

the medication, which is put on the medication package by the dispensing pharmacy," says Davis.