

# Medication Safety Issue Brief

## *Bar Code Implementation Strategies*

2

of 6 in a series

*Series III*

Successful implementation strategies for bar code technology is the focus of part two in a six-part series that highlights underlying causes of and solutions to medication errors. This series is a joint effort of the American Hospital Association, the American Society of Health-System Pharmacists and *Hospitals & Health Networks*, with generous support from McKesson. You may tear this card out for future reference. Additional copies are available in PDF format, along with those from two previous series, on the ASHP and *H&HN* Web sites ([www.ashp.org](http://www.ashp.org) and [www.hhnmag.com](http://www.hhnmag.com)).

### • SUMMARY

Bar code technology is hailed as a tool to prevent medication errors from occurring where they could cause the most harm—at the point of care. It provides an extra layer of protection for front-line caregivers and helps hospitals comply with Joint Commission on Accreditation of Healthcare Organizations' standards and patient safety goals. Specifically, it helps hospitals meet requirements to verify orders and patients before medication administration. It ensures that nurses administer the right drug to the right patient in the right dose at the right time and by the right route.

### • ISSUE BRIEF

Organizations with bar code technology say reductions in medication errors provide ample return on investment, especially considering that some errors would likely result in harm to the patient. HCA, Nashville, Tenn., this year is expected to complete bar code implementation in inpatient settings at its 186 hospitals. Alicia Perry, HCA's director of medication safety, says an error was averted within 30 minutes of bar code activation at nearly all of its facilities, reinforcing the benefit of the technology.

The success of the bar code implementation, which coincided with the launch of an electronic medication administration record, is attributed largely to leadership involvement, particularly that of midlevel managers. "Administration and management must be engaged if they are to instill trust in the end-users," agrees Chris Tucker, head of the Department of Veterans Affairs Bar Code Medication Administration Program, which oversaw bar code implementation at the VAs 157 facilities. "Leadership must communicate that the technology is there to provide a safer environment for the patient."

Regardless of facility size—HCA and the VA have implemented the technology at facilities ranging from 20 beds to 800 beds—it involves substantial culture change. "The software implementation is easy," says Perry. "It's the culture change that's hard. You have to teach people how to use data to create process change." Many staff members wrongly perceive bar coding as a pharmacy initiative. "It's a hospital-wide initiative because it changes the way medications are handled from the time they arrive at the loading dock to when they are administered to the patient," she says. Both Perry and Tucker emphasize that the involvement of end-users in the selection and implementation of bar code technology is imperative. And both advocate the use of a dedicated staff person to oversee the project. Organizations can facilitate bar code implementation, Tucker says, by implementing a wireless infrastructure and upgrading its hardware in advance.



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## ACTION Resources

Here is a list of resources you can use to access your bar coding needs and readiness:

- **Assessing Bedside Bar-Coding Readiness** from the American Hospital Association, Health Research and Educational Trust and the Institute for Safe Medication Practices is a comprehensive guide to help hospitals know what is required to implement bar code technology. It's available at: [www.ismp.org/PDF/PathwaySection3.pdf](http://www.ismp.org/PDF/PathwaySection3.pdf).

- **Bar Coding: A Practical Approach to Improving Medication Safety** by the American Society of Health-System Pharmacists provides insight into the selection of bar code technology. It can be found at: [www.ashp.org/emplibrary/BarCodingMonograph.pdf](http://www.ashp.org/emplibrary/BarCodingMonograph.pdf).

- **Implementing a Bar Coded Medication Safety Program: Pharmacist's Toolkit** by the American Society of Health-System Pharmacists Research and Education Foundation: [www.ashp.foundation.org/BarCoded.pdf](http://www.ashp.foundation.org/BarCoded.pdf).

- **Implementation Guide for Use of Bar Code Technology in Healthcare** provides an extensive look at bar code technology. Produced by the Healthcare Information Management Systems Society, it can be found at: [www.himss.org/content/files/Implementation\\_guide.pdf](http://www.himss.org/content/files/Implementation_guide.pdf).

- **Improve Core Processes for Dispensing Medications: Use Bar Codes to Identify Medications** is an Internet resource from the Institute for Healthcare Improvement, it can be found at: [www.ihl.org/IHI/Topics/PatientSafety/MedicationSystems/Changes/IndividualChanges/Use+Bar+Codes+to+Identify+Medications.htm](http://www.ihl.org/IHI/Topics/PatientSafety/MedicationSystems/Changes/IndividualChanges/Use+Bar+Codes+to+Identify+Medications.htm).

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### ● CASE STUDIES

**Parker (Colo.) Adventist Hospital:** When 58-bed Parker Adventist Hospital opened its doors in February 2004, bar code technology was installed in the 36-bed med-surg unit. Not only has the technology improved patient safety—averting 27 errors in the first nine months following implementation—it streamlined nurse workflow. The patient's medication administration record is immediately updated in the hospital information system, ensuring accuracy and saving nurses time in the charting process. "It works," says Geoff Lawton, director of pharmacy and nutrition services, noting that there's still a fair amount of skepticism about use of bar code technology in small hospitals. "It's expensive, difficult and labor-intensive to implement, but it does work for small, private community hospitals." Bar coding will be installed in the 12-bed neonatal ICU this spring. It will be installed in the rest of the hospital following implementation of a new HIS at Parker and the 11 other hospitals in the Centura Health system. Collaboration between nurses, the pharmacy and the IT department is crucial to success of the project. "They need to trust and support each other," Lawton says.

**Concord (N.H.) Hospital:** When it comes to the use of bar code technology in hospitals, Concord Hospital was a pioneer. In 1993, the hospital installed bar coding to improve patient safety. "The environment was different then," says Mary Ann Cioffi, R.N., an education and nurse supervisor. "Patient safety wasn't the buzzword it is now and the comfort level of our staff with computers was very low." She credits the technology's success on the extensive training and support that staff receive. Use of bar coding is continually monitored to make sure it's used correctly and employees receive support and training as needed. Today, it serves as a recruitment tool. "Nurses come to our hospital because they know the added safety and support that bar coding provides," Cioffi says. Medication errors have dropped 80 percent since the technology was installed.

**Methodist Medical Center, Peoria, Ill.:** When Methodist Medical Center implemented bar code technology in September 2001 on its oncology unit, it saw a sharp rise in medication errors. Although initially disconcerting, it showed that the system was effective. "It finds any type of error," says Michael Namanny, director of pharmacy, "including some we wouldn't have identified before." The system is now in place throughout the hospital, with the exception of an adult behavioral health unit. Medication errors have dropped by 50 percent from a few months after implementation, when the hospital felt it had an accurate count of its error rate. "There's nothing like hearing from a nurse that a serious error has been avoided," he says. "Once that occurs, they will always use it." One of the biggest challenges the hospital has encountered with the technology is obtaining unit-dose bar code medications. The hospital has to order some medications outside of its group purchasing organization contract. "We'd rather spend more on the medication than add more work for the pharmacy technicians," says Michelle Guerink, an IT pharmacy analyst. ●

