



# Strategies

## FOR NURSE MANAGERS

### Infection control

## Hand hygiene rates improved through variety of reinforcement styles

#### Continuing Education | Learning Objectives

After reading this article, you will be able to:

- ▶ Describe changes made by Barnes-Jewish St. Peters Hospital to improve hand hygiene numbers from 2004 to 2005
- ▶ Discuss the results of additional staff training in 2006
- ▶ Identify methods for preventing negative staff reaction to hand hygiene surveys
- ▶ Discuss methods for improving the overall culture for hand hygiene compliance

It takes more than one method to bring a hospital's hand hygiene compliance rate above 90%. At Barnes-Jewish St. Peters (MO) Hospital (BJSPH), it was a matter of trial and error to reach its compliance goal.

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"We started collecting hand hygiene observations back in 2004," says **Kathleen Dougherty, RN, MSN**, manager of professional practice and leadership development at BJSPH. "We wanted to see where we were with compliance for guidelines from the Centers for Disease Control and Prevention [CDC]."

Taking 100 observations per quarter, the organization found its hand hygiene compliance rate was 57%. Conversations began on how to reach the CDC goal. The 2004 numbers illustrated the need for increased compliance; the renewed awareness alone caused a significant jump in compliance in 2005.

"We got our rates up to 79% [in 2005]," says Dougherty. "This came about just based on a general heightened awareness of hand hygiene. We

**"Any [month] we meet or exceed our goal, we will take the names of everyone who was recognized as doing a good job, put their names into a drawing, and have a 'hand hygiene hero' drawn in the cafeteria."**

—*Kathleen Dougherty, RN, MSN*

didn't have a pointed focus or implementation plan."

Although the jump was encouraging, it still did not bring the organization's compliance numbers to an acceptable level. But the organization was collecting data.

The facility has seen significant rates of improvement each year since this time—remaining over 90% and at times hitting 99% compliance in 2009.

### Education and training

BJSPH is a member of BJC HealthCare, a 13-hospital system in Missouri. The hospitals share a center for healthcare quality and effectiveness, which works closely with all facilities to develop standards and practices to be used across the system.

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## Reinforcement styles

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“The center looks at regulations that relate to clinical quality and patient safety and assists with development of protocols and procedures to facilitate positive results,” says Dougherty. The center knew hand hygiene compliance was about to explode on the national level. At the time, The Joint Commission (formerly JCAHO) was increasing its focus on this issue, and BJC wanted to be prepared.

“We also knew we’d be accountable to publish data [on hand hygiene compliance] on a regular basis,” says Dougherty. Thus, in 2006, mandatory training was implemented. “Every employee was provided with training on hand hygiene in 2006,” she says.

However, the increase in compliance was minimal, climbing to 80% that year. Simultaneous to the training, the organization started using hand hygiene auditors—essentially undercover agents looking for hand hygiene compliance—to act as observers.

“These auditors were on all shifts like secret shoppers,” says Dougherty.

They came from all walks of hospital life—not just physicians and nurses, but secretaries, housekeepers, lab techs, and others.

When the numbers did not rise as much as expected, extra training was provided, additional auditors were trained, and compliance rates were reported at departmental meetings.

### You’ve been spotted

“In 2007, we knew we had to do more, and we wanted to do more,” says Dougherty. “We wanted to be at 90% hand hygiene compliance by the end of that year.”

BJSPH increased the frequency of the audits to a minimum of 100 per month.

“Our point of view was if you increase your ‘n,’ you have a better chance of being successful,” Dougherty explains.

In February 2007, after a brief discussion with a Joint Commission surveyor, BJSPH learned of the idea to use cards as a method of feedback during audits. The hospital took this idea and developed it further into a very simple but highly effective concept: “You’ve Been Spotted” cards.

These cards—adorned with a Dalmatian to support the “spotted” theme—come in two varieties. At a distance, they appear indistinguishable, but up close, the two varieties are unique.

For positive reinforcement, some of the cards are flagged for incidents in which the receiver has been spotted using good hand hygiene practices. These cards include a \$2 coupon that’s good in the hospital cafeteria or gift shop, which is enough for a cup of coffee or candy bar.

Receivers of multiple positive reinforcement cards can use them together to purchase lunch. Funding for these coupons came from the infection prevention budget.

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## On the spot

The second type of card reads, “We are putting you on the spot for not using hand hygiene.”

The reason the cards look nearly identical is to prevent embarrassment for the people involved. It’s impossible to tell from a few feet away whether you’ve received a positive or negative card.

“We needed something nonconfrontational,” says Dougherty. “We wanted something with positive reinforcement, but also something to notify you if you got caught. We didn’t want this to be a public display.”

The dynamic is an interesting one, especially because the auditors can be from any area of the hospital hierarchy. For example, secretaries have had to give cards to physicians.

The introduction of the cards showed an increase in compliance, but not enough of a jump to be completely satisfactory. “We saw an increase that year. We made it to 90% one month, but for year-to-date we were at 86%,” says Dougherty.

Posting names was the next step toward improvement. “We continued the positive rewards program, but ... we started reporting both those who did well and those who needed to improve,” explains Dougherty.

## The good with the bad

There was much deliberation within the leadership team on the concept of posting names. Leaders made a conscious decision to hold everyone accountable while continuing to use the carrot instead of the stick, staying with positive reinforcement to motivate their employees to higher hand hygiene compliance.

To temper the negative reinforcement of posting names—which helped improve compliance as well—BJSPH implemented an additional, and very public, way of rewarding those who were spotted using proper hand hygiene processes.

“Any [month] we meet or exceed our goal, we will take the names of everyone who was recognized as doing a good job, put their names into a drawing, and

have a ‘hand hygiene hero’ drawn in the cafeteria,” says Dougherty.

The cafeteria is shared by staff members and guests, so the congratulatory ceremony, which includes the loud playing of Bonnie Tyler’s 1980’s hit “Holding Out for a Hero,” can be witnessed not only by staff members, but also patients and their visitors. The winner of the drawing receives a \$25 gift certificate, and in months in which the goal is exceeded, multiple names are drawn.

Winners’ pictures are taken and posted throughout the building and even made into screensavers on hospital computers. The tactic has been well received by staff members, and when a winner is present in the cafeteria during the drawing, cheers have been known to break out.

Handling positive recognition is easy. Those spotted to be noncompliant can be more of a challenge.

Non-staff members are not immune to the card system. If a physician or advanced practice nurse is spotted not following hand hygiene protocol, the hospital’s risk manager follows up with the independent practitioner separately.

It’s not all “gotcha,” either. BJSPH uses the “Just Culture” concepts, acknowledging human error, and the follow-up for noncompliance is not without managerial discretion. The factors leading up to an incident are taken into consideration when a noncompliant employee is spotted. “Managers are expected to hold staff accountable,” says Dougherty.

To the program’s benefit, the auditors have remained remarkably consistent over its duration. To keep the secret shopper concept fresh, the auditors don’t continually work the same shifts or areas of the building. A fluid schedule allows the auditors to remain anonymous even as they keep their role year after year.

“We’ve sent the message that these patients belong to all of us,” says Dougherty. ■

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### Source

Adapted from **Briefings on The Joint Commission**, December 2009, HCPro, Inc.

**Evidence-based practice****Multiple interventions reduce VAP rates****Oral decontamination leads to significant drop**

Continuing Education | Learning Objectives

After reading this article, you will be able to:

- ▶ Identify effective processes for reducing VAP rates
- ▶ Justify why oral care is the most important intervention
- ▶ Analyze ways to intervene during the process to improve compliance

Although The Joint Commission's National Patient Safety Goals force many organizations to focus primarily on MRSA, central line-associated bloodstream infections, and surgical site infections, ventilator-associated pneumonia (VAP) is a high priority for anyone in the hospital setting.

Mortality rates alone force hospitals to take a critical look at prevention processes. VAP is the leading cause of death among hospital-acquired infections, according to the Institute for Healthcare Improvement (IHI). Hospital mortality of patients already ventilated who develop VAP is 46%, compared to 32% for those who are ventilated and do not develop VAP.

Just as most facilities have implemented central line and surgical site bundles, the IHI has published a ventilator bundle with four evidence-based practices:

- ▶ Elevation of the head of the bed
- ▶ Daily "sedation vacations" and assessment of readiness to extubate
- ▶ Peptic ulcer disease prophylaxis
- ▶ Deep venous thrombosis prophylaxis

A study published in the October 2009 *American Journal of Infection Control* focused on prevention of VAP in the intensive care setting. The study implemented interventions in three different phases to reduce the incidence of VAP in the ICU.

In the study's first phase, from March 2001 to December 2002, researchers evaluated the effectiveness

of Centers for Disease Control and Prevention (CDC)-recommended evidence-based practices, including no routine changing of humidified ventilator circuits, periodically draining and discarding condensation collecting in the ventilator tubing, and changing the heat and moisture exchangers when they malfunctioned mechanically or became visibly soiled.

From January 2003 to December 2006, researchers intervened in the processes while performance monitoring was occurring at the bedside.

Finally, from January 2007 to September 2008, the researchers continued interventions and implemented the IHI bundle in addition to oral decontamination with chlorhexidine and the use of continuous aspiration of subglottic secretions (CASS) endotracheal tubes, says **Alexandre R. Marra, PhD**, lead author of the study and infectious disease physician for the ICU and medical practice division at Hospital Israelita Albert Einstein in São Paulo, Brazil.

The incidence density of VAP in the ICU per 1,000 days was reduced from 16.4 in phase one to 15.0 in phase two to 10.4 in phase three. The study noted that achieving a rate of zero VAP was possible only in phase three, when all interventions exceeded 95% compliance. In November 2009, the hospital celebrated one year without VAP.

"Our main reason for doing the study was to show that VAP prevention using the majority of evidence-based measures for controlling this hospital-acquired infection in the ICU is a difficult process that involves the accountability of many healthcare workers who care for ventilated patients," Marra says.

**The initial results**

The first phase of CDC evidence-based practices yielded disappointing results, particularly regarding compliance rates, Marra says.

“It was necessary to have a lot of discussions and changing ideas with the ICU team to make a better performance in our compliance rates,” he says. The ICU team was composed of doctors, nurses, and respiratory therapists.

In early 2007, the hospital’s CEO declared zero tolerance for VAP. Intervention measures continued, but with

### Oral care: The most important phase

Evidence is mounting that in addition to the Institute for Healthcare Improvement’s ventilator bundle, oral care is an important infection prevention process, according to a study published in the October 2009 *American Journal of Infection Control*.

**Alexandre R. Marra, PhD**, lead author of the study and infectious disease physician for the ICU and medical practice division at Hospital Israelita Albert Einstein in São Paulo, Brazil, says the last phase was the most important in significantly reducing VAP rates.

“I strongly believe, and I have no doubt, that the last phase was the most important,” Marra says. “We got a decrease of more than 70% in our VAP rate in the ICU.”

A study published in the September 2009 *American Journal of Infection Control* focuses on oral care to prevent VAP. Mercy Medical Center in Springfield, MA, initiated the following measures every four hours for mechanically ventilated patients:

- ▶ Brushing patients’ teeth with cetylpyridinium chloride (changed to chlorhexidine gluconate in 2007) using a suction toothbrush
- ▶ Cleaning the oral cavity with suction swabs treated with hydrogen peroxide
- ▶ Applying mouth moisturizer
- ▶ Performing deep oropharyngeal suctioning
- ▶ Controlling secretions with suction catheters

**Kathleen Hutchins, RN, MSN**, lead author of the latter study, began research in 2004. By 2007, oral care intervention, coupled with the ventilator bundle, led to an 89.7% reduction in the VAP rate at Mercy.

#### Source

Adapted from **Briefings on Infection Control**, January 2010, HCPro, Inc.

more intensity and urgency, Marra says. At that point, phase three was also initiated as an added measure.

### Implementing all three phases at once

Although Marra’s study gradually implemented each phase over the course of more than seven years, implementation of all three phases yields optimum results.

“Our recommendation is to begin using all the sources at the same time: VAP bundle, oral decontamination with chlorhexidine, and CASS endotracheal tubes,” says Marra. “It is important to mention that VAP bundle is not a checklist, but a process that is necessary to intervene for improving compliance with these processes at the same time that performance monitoring is occurring at the bedside.”

The intervention portion of the study was particularly beneficial. It’s not enough to simply hand staff members a checklist. Working with ICU team members to ensure consistent and correct compliance is the only way to see improvements, Marra says.

“Our experience shows that it is not enough to control [head of the bed] or only to implement the IHI ventilator bundle, as some centers have advocated,” says Marra. “We believe that by getting the involvement of all members of the ICU team, we ultimately had success in applying all these process measures over several years. We have an ICU nurse taking care of these processes every day and also a respiratory therapist giving support to us.”

Although the ICU team at Hospital Israelita Albert Einstein has been able to sustain zero VAP rates for a full year, Marra recognizes the goal is ensuring continued compliance to achieve that rate.

“We are completely aware that we may not be able to sustain zero VAP rates indefinitely, but our goal is to sustain nearly perfect compliance with the ventilator bundle and maintain ICU team motivation for VAP prevention,” Marra says. ■

#### Source

Adapted from **Briefings on Infection Control**, January 2010, HCPro, Inc.

**Best practice****Pilot program identifies the cause of frequent ED visits; patients overcome barriers**

Continuing Education | Learning Objectives

After reading this article, you will be able to:

- ▶ Describe the University Health Care Center's ED Visit Reduction Pilot Program
- ▶ Recall how UHCC staff members overcame barriers that prevented patients from normal healthcare avenues

Coughing children, teens with gunshot wounds, patients with broken bones; for many facilities, the ED is a chaotic and crowded place.

Compounding the situation, there is a population of patients who use the ED as their main access point to healthcare. Often, these patients' problems are not emergencies and care could be better provided by primary care providers (PCP) or outpatient clinics. However, mental, social, economic, and logistical barriers prevent patients from pursuing the normal avenues to healthcare, and the ED is typically the easiest option.

Facilities cannot turn these patients away, as it goes against medical ethics and the Emergency Medical Treatment & Active Labor Act of 1986. So facilities such as University Health Care Center (UHCC) in Syracuse, NY, create programs to work with such ED regulars to provide more suitable care and overcome potential barriers.

**Finding the prospective patients**

UHCC modeled its program for handling frequent ED visitors after one established at Swedish Medical Center in Englewood, CO, says **Pamela O'Donnell, RN, BSN**, ED case manager at UHCC. "I read an article about ED overcrowding and 'frequent fliers' written by Sheryl Swan, RN, at Swedish Medical Center and then adapted their program to our situation," says O'Donnell.

To find the sample patient population for the pilot program, the hospital's information technology department

looked at all the ED admissions from the previous six months and compiled a list of the 50 most frequent ED visitors.

"Ideally, we would be able to address each of those top 50 visitors," O'Donnell says. Instead, the committee of social workers, case managers, and directors decided to deal with a small group and evaluate the program. Based on those results, the committee would decide whether the hospital could take on a larger group.

The committee identified patients with PCPs in the same hospital system. It eliminated patients with sickle-cell anemia, which requires frequent ED visits, and mental health problems, which limit a patient's ability to comply with healthcare regimens.

After applying those filters, the committee had five patients who met the hospital's desired criteria:

- ▶ More than 10 visits to the ED in the past year
- ▶ Have a PCP at UHCC (previously or currently)
- ▶ Have no diagnosed psychiatric issues at this time

Those five would be the prospective patients used in the hospital's Emergency Department Visit Reduction Pilot Program.

**Identifying and overcoming barriers**

Using forms and tools developed by the committee (see p. 8), ED social workers and case managers interacted with the prospective patients each time they presented to the ED or the outpatient setting. During the first encounter, patients answered basic questions, including:

- ▶ Why they chose the ED instead of contacting their PCP
- ▶ What mode of transportation they used to get to the ED
- ▶ Whether there had been any recent changes in their family or living situations

This initial assessment revealed several barriers that led to frequent ED visits. For example, one man did not have a phone service, so he could not contact his PCP to make an appointment or ask questions about his medications. However, he could call 911 from his phone, which meant he presented to the ED whenever he had a medical issue. In this situation, the patient's family offered to add the patient on their family cell phone plan.

Another patient's anxiety proved to be his biggest barrier. "This particular patient would always visit the emergency room at night. We talked and we realized that he had terrible insomnia and terrible anxiety," says **Taisa Reynolds, LMSW**, social worker at UHCC.

The UHCC staff was able to get this patient treatment for his anxiety and insomnia, which in turn greatly reduced his visits to the ED.

Instead of merely treating the condition the patient presented for—frequent chest pain or stomach pain—on that particular occasion, the UHCC staff was able to also address the root cause of the patient's frequent visits.

### Overcoming systemic barriers

In many cases, social workers and case managers at UHCC found they were filling in the gaps left by a patient's PCP. Reynolds believes the problem at UHCC is part of a nationwide shortage of PCPs. "In my opinion, we don't have enough primary care. PCPs don't have enough time to have one-on-one time with patients because their caseload is ridiculous," she says.

Reynolds says PCPs spend a majority of their time overseeing the overall medical piece of the patient's care—making sure the patient sees the right specialists and making referrals—but that doesn't leave much time to address the patient's social and environmental issues.

O'Donnell and Reynolds say the prospective patients have reacted positively to the program.

"One patient in particular was very excited that someone had taken an interest in his specific case," Reynolds says. "He seemed all for it and really enjoyed the one-on-one attention."

### Tracking progress

Each time a social worker or case manager interacted with a prospective patient, he or she used forms to track the patient's progress. UHCC staff members saved the forms to a shared computer network so all committee members could access the documents and make changes.

After interacting and tracking the patients' progress for six months, the committee compared the number of ED visits during that time to the previous six-month period:

- ▶ Patient #1 visited 25 times compared to 35 visits in the previous six-month period.
- ▶ Patient #2 visited 15 times compared to 29 visits in the previous six months. Of those 15 visits, seven resulted in admission to the hospital.
- ▶ Patient #3 visited four times compared to eight in the previous six-month period.
- ▶ Patient #4 visited once compared to four times in the previous six-month period. This patient had been a frequent visitor to the pediatric ED in 2007 and has successfully made the transition to adult medicine, thus greatly reducing visits.
- ▶ Patient #5 had no visits compared to five ED visits in the previous six months. The patient was enrolled in the Enriched Resources for Independent Living program, enabling the patient to receive meals, medications, and case management interventions. ■

#### Source

Adapted from **Case Management Monthly**, December 2009, HCPro, Inc.

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## ED tool

Name \_\_\_\_\_ DOB \_\_\_\_\_ MR# \_\_\_\_\_ Address \_\_\_\_\_

Phone number (home) \_\_\_\_\_ (cell) \_\_\_\_\_ (work) \_\_\_\_\_

PCP \_\_\_\_\_ Office number \_\_\_\_\_

Specialty physicians/clinic \_\_\_\_\_ Office number \_\_\_\_\_

Reason for visit on initial assessment \_\_\_\_\_

**Why did you come to the ED rather than contacting your PCP?**

Instructed by PCP \_\_\_\_\_ Office not open \_\_\_\_\_ Financial issues with PCP \_\_\_\_\_

Financial issues re: RX \_\_\_\_\_ Other \_\_\_\_\_

**Insurance**

Medicaid \_\_\_\_\_ Limitations to Medicaid \_\_\_\_\_ Medicare \_\_\_\_\_

Commercial \_\_\_\_\_ Self-pay \_\_\_\_\_ Prescription coverage/copay \_\_\_\_\_

Last ED visit \_\_\_\_\_ Number of ED visits this year \_\_\_\_\_

Last PCP visit \_\_\_\_\_ Number of PCP visits scheduled \_\_\_\_\_ Number of PCP visits attended \_\_\_\_\_

**Would you sign a release of information so we can talk with other providers outside of the hospital?**

Date signed and placed in medical record \_\_\_\_\_

**Do you use community resources?**

Home care nursing/HA/PT agency \_\_\_\_\_ Durable medical equipment \_\_\_\_\_ Case manager \_\_\_\_\_

Outside agency (Enable, SHA, OCM, etc.) \_\_\_\_\_ Other \_\_\_\_\_

Are there financial problems? \_\_\_\_\_

Are there any recent changes in your living situation? \_\_\_\_\_

Do you have family/friends that you trust/depend on? Name \_\_\_\_\_ Phone number \_\_\_\_\_

Can we talk with them about your specific issues and include them in your plan of care? \_\_\_\_\_

Transportation: Drive self \_\_\_\_\_ County transportation \_\_\_\_\_ Family/friend \_\_\_\_\_ Other \_\_\_\_\_

What is the highest grade you attended in school? \_\_\_\_\_

Do you have any diagnosis that affects how you read, reason, or make decisions? \_\_\_\_\_

What do you see as the main problem, and how do you see us assisting you in that area? \_\_\_\_\_

Do you recognize situations (e.g., weather changes, family situations) that affect your health? \_\_\_\_\_

Source: Pamela O'Donnell, ED case manager, University Health Care Center, Syracuse, NY.

**Patient safety****Study: Nurses use repetitive processes to catch medication errors, improve patient care****Supportive environment, hours per patient day factors in error prevention**

Continuing Education | Learning Objectives

After reading this article, you will be able to:

- ▶ Describe the methods nurses use to catch medication errors
- ▶ Identify the barriers nurses must overcome to catch medication errors

Each year, medication errors are responsible for 7,000 patient deaths and cost the healthcare system \$2 billion. Even more shocking, perhaps, is the knowledge that nearly 50% of potential medication errors are caught before making it to the patient. Of those potential errors, 87% are intercepted by nurses.

**Linda Flynn, RN, PhD**, associate professor at the University of Maryland School of Nursing in Baltimore, recently led a study concerning medication errors and how the practice environment and the level of nurse staffing affect medication error rates.

Flynn, project director and principal investigator of the Interdisciplinary Nursing Quality Research Initiative (INQRI)–funded study, presented on the topic during an INQRI Webcast October 7, 2009. INQRI, a project of the Robert Wood Johnson Foundation, was created to examine nurses' effect on patient safety.

"Nurses are the safety net that keeps patients safe from experiencing a medication error," said Flynn.

The study attempted to answer a few questions: What are the factors that impact this nursing safety net? What are the factors that help nurses in doing their job to intercept medication errors before they reach the patient? And what factors serve as barriers to this safety net?

The study focused on identifying the costs and implications of medication errors. Flynn's team, from the New Jersey Collaborating Center for Nursing at Rutgers

University's College of Nursing in Newark, did so by examining work environments and nurse staffing levels. Broken down into three separate parts, the study received participants from 14 hospitals in New Jersey.

The study revealed that medication errors are costly, averaging more than \$6,000 extra spent on patients who experience a medication error (not necessarily an adverse drug event). Additionally, nurses employ four distinct medication safety processes to help find medication errors before they reach the patient.

These processes were enhanced when the nurses felt that their work environment was supportive, giving them time to effectively use these processes.

**What processes do nurses use to catch medication errors?**

The first part of the study examined what nurses do specifically during their everyday jobs to prevent medication errors from reaching the patient. Flynn and her team interviewed 50 staff nurses from 10 hospitals, transcribed the interviews, and analyzed the lines of text for patterns and commonalities. They found that nurses take seven routine steps in the name of medication safety:

- 1. Conducting independent review of the medication administration record (MAR) in comparison with the medication order.** This is a process that, in most hospitals, is conducted by nurses who work the night shift. The nurses who were interviewed predominantly worked the day shift and said that although this review was done systematically in their hospitals, they felt an obligation to double-check that the medications they had on their order sheet actually matched the orders, said Flynn.
- 2. Making a focused assessment of patients prior to administering medication.** Nurses recognize

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## Patient safety

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that patients' conditions are dynamic and medications that were originally prescribed may no longer be appropriate.

3. **Questioning rationale.** This critical thinking activity requires nurses to ask why a specific medication may have been ordered by the physician prior to administering it.
4. **Prioritizing face time with physicians.** Most nurses in the study said they tried to see the physicians when they were on their floor so they could be aware of any changes in their patients' medication regimens or care plans.
5. **Encouraging patients and families to be the last line of defense for a medication error.** "They spent time each day educating patients and their families about what they were taking, why they were taking it, and any changes in their medication regimens so that if [they] saw something that looked unusual or hadn't been described or explained to them, they would raise the red flag and ask questions," said Flynn.
6. **Coordinating with the pharmacy to ensure timeliness of medication delivery.** There is often a mismatch between nursing and pharmacy systems.
7. **Clarifying orders with physicians.** Nurses ask physicians to rewrite orders written in illegible or confusing handwriting or those that do not use standard abbreviations.

Of these processes, Flynn and her team found that numbers 1, 3, 5, and 7 were significantly associated with fewer medication errors. Additionally, there was overwhelming evidence that these practices were enhanced when the nurses worked in a supportive staffing environment. This factor was stronger even than nurse staffing levels, says Flynn.

"All five subscales of the practice environment scale were significantly and independently associated with a higher level of nurses' medication safety processes,

both before and after adjusting for nurse staffing," says Flynn. "The effect of the practice environment was much stronger than the effect of RN staffing levels, which is good news for us because there is a limit to the number of nurses we can recruit and hire."

The five scales that make up the total practice environment that Flynn referred to are: foundations for quality, relationships with physicians, participation in decisions, adequate staffing, and a supportive manager.

Nurse staffing levels were associated with nurses' increased use of processes to prevent medication errors, but the magnitude of its effect was smaller, she said.

### Barriers to preventing medication errors

Through the course of the study, Flynn's team found that two main barriers often impeded nurses' ability to catch medication errors and keep patients safe: interruptions and a poor nursing-pharmacy interface.

Interruptions disrupt the MAR process and reduce the ability to catch potential medication errors coming from other sources.

To read more about Flynn's medication safety initiative and the methods she used for her study, visit [www.inqri.org](http://www.inqri.org). ■

### Source

Adapted from **Patient Safety Monitor (Briefings on Patient Safety)**, December 2009, HCPro, Inc.

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## Technology

# Nurses save time and prevent frustration with addition of new computer carts in patient rooms

When the University of Colorado Hospital (UCH) moved to a new facility in July 2007, it saw an opportunity to improve nurse satisfaction by upgrading the computer process nurses used at the bedside. The Aurora-based hospital first received ANCC Magnet Recognition Program® (MRP) designation in 2002 and was redesignated in 2006.

In the old facility, nurses in med-surg areas had carts assigned to them, which they rolled from patient room to patient room as they made their rounds so they could use the computer on the cart as they administered medication and documented at the bedside.

The carts were a huge frustration for nurses, says **Kathy Smith, MS, PMC, RN**, nursing informatics supervisor and former MRP project director at UCH. The carts were difficult to roll on the carpet when moving from one patient room to another, and if the cart encountered a bump, it often logged nurses off the computer. The computers also had batteries, which made the carts heavy to maneuver, and nurses found the batteries often died at inopportune moments.

In addition, UCH realized that having one cart per nurse wouldn't work with the new bar code medication administration its system was implementing.

"We could see right away that was not going to work," says Smith. "It would require that every time a nurse wanted to administer a medication, she would have to go find her cart, unplug it, move it into the room, then plug it back in, then boot it up, then administer the meds."

Although the hospital had already budgeted and expended money on the new bar code medication administration system, the CNO went back to the executive leadership to stress the need for nurses to have a computer in every room in the hospital. Despite the significant budget, the hospital invested in its nurses.

UCH chose another cart system, rather than a wall-mounted computer, because nurses wanted flexibility with moving the cart around to different parts of the room. Also, UCH had already planned the rooms in the new building, which weren't designed for wall-mounted computers.

To choose the best system, the hospital staged a cart fair, at which nurses could examine the types of carts on the market and determine the ones that would best meet their needs. They eventually chose mobile computing carts from Rubbermaid® Medical Solutions.

"The new carts now stay put in every patient room," says Smith. "They are plugged into the wall so nurses don't have to worry about the battery ever being run down." But still having the computer on a cart gives nurses the freedom to move around the room and use the computer where it makes the most sense for them and their patients.

The carts have a computer screen, the central processing unit in box, a big work space, a drawer, and a light. The light enables nurses to see medications and other supplies during the night shift without turning on the lights in the room and disturbing patients.

The new computers were crucial to the successful adoption of the bar code medication administration system. "I think we would have had a revolt if we hadn't done it," Smith says. "And it would probably have been a failure for our bar code medication administration project."

The carts also contribute to nurse satisfaction. "The nurses made a big poster with a big thank-you card and gave it to the CNO," Smith says. It said 'Cow-a-bunga! ["Cow" is an abbreviation for "computer on wheels.]" We love the new computers in patient rooms!'" ■

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### Source

Adapted from **HCPPro's Advisor** to the ANCC Magnet Recognition Program®, December 2009, HCPPro, Inc.

**Tip of the month**

# Office safety: Protecting yourself from workplace violence

The complexities of healthcare delivery systems require communication tools that are effective and non-abrasive, as managers may be confronted with aggressive scenarios in the workplace. However, managers must protect their individual work spaces as well.

Perform a safety check of your office space and develop a plan. Start by asking yourself the following questions:

- Do I actually lock private files or do I only lock my doors?
- Do I have an escape route from behind my desk if I am confronted by someone entering my office? If not, consider repositioning your desk and chair.
- Do I have a plan in place for who I will call should someone in my office use threatening language or behavior?
- Do I have a work area other than my office for meetings, performance reviews, or other activities that could potentially lead to aggressive behavior?

For more information, check out the Occupational Safety and Health Administration’s fact sheet on workplace violence at [www.osha.gov/OshDoc/data\\_General\\_Facts/factsheet-workplace-violence.pdf](http://www.osha.gov/OshDoc/data_General_Facts/factsheet-workplace-violence.pdf). ■

**Reference**

Amdur, E. (2009). *Grace Under Fire: Establishing a Culture of Safety and Learning the Skills for Calming and De-escalating Aggressive Individuals*. Washington: Stand and Live, Inc.

**Source**

Shelley Cohen, RN, MSN, CEN, Health Resources Unlimited, [www.hru.net](http://www.hru.net). Adapted with permission.

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—Sheila Gerald, RN, CIC, CLNC

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