New USP chapter addresses physical environment for safe medication use

Pharmacy personnel should consider demarcating the critical area where pharmacists review medication orders or inspect medications before dispensing them, according to a new United States Pharmacopeia (USP) chapter that aims to promote safe medication use.

Such an area, which USP calls a medication safety zone, has appropriate lighting and sound levels, a physical design conducive to the use of information and performance of the specific tasks, and a minimal potential for distraction and interruption.

Interpretive, not mandatory. The new chapter, “Physical Environments That Promote Safe Medication Use,” in and of itself has no mandatory requirements.

Its number is 1066, putting the chapter in the part of USP considered by the publisher to be interpretive.

Safety-zone necessities. According to USP chapter 1066, a medication safety zone is “a critical area where medications are prescribed, orders are entered into a computer or transcribed onto paper documents, and where medications are prepared, dispensed, or administered.”

In brief, the chapter recommends that:

- A computer-order-entry area have an illumination level of at least 1000 lux,
- A prescription-fill or medication-inspection area have an illumination level of 900–1500 lux,
- Lighting be provided by fluorescent “cool white deluxe” or compact fluorescent lamps,
- Sound levels not exceed 50 decibels, the level of conversation,
- Materials and records be readily available, and
- The potential for distraction and interruption be minimized, perhaps by a physical barrier.

“Improving the physical work environment,” said Elizabeth A. Flynn, the primary drafter of the chapter, “is a pretty inexpensive way to optimize accuracy.”

Flynn is an affiliate associate research professor at Alabama’s Auburn University in the Harrison School of Pharmacy’s Center for Pharmacy Operations and Designs.

Establishing a USP-recommended physical environment in the hospital pharmacy specifically for order review and dose-preparation checks, however, is not as simple as it sounds, said Marjorie Shaw Phillips, who serves as the medication safety officer at Medical College of Georgia (MCG) Health in Augusta.

Like Flynn, Phillips is a member of the group that developed USP chapter 1066.

A challenging concept to implement. MCGHealth’s central pharmacy a few years ago tried out having a quiet area where pharmacists could review medication orders and profiles without interruptions, Phillips said. A divider similar to one for a cubicule demarcated the area and isolated at least one of the pharmacists assigned to those tasks.

“The pharmacists almost uniformly rebelled against” working in the isolated area, she said.

“They wanted to be able to see their coworkers, to see what the technicians were doing, to see when someone came into the pharmacy,” Phillips said. “And so they asked that the barrier be taken down.”

Nonetheless, the concept of a safety zone for medications other than pharmacy-compounded sterile preparations remains alive in MCGHealth’s central pharmacy.

“It’s one of those ongoing works in progress,” Phillips said.

With MCGHealth’s adoption of an electronic medication administration record system, she said, nurses now can alert the pharmacy about a missing dose by right-clicking on the patient’s record to send a message rather than calling. A printer in the pharmacy generates a hard copy of the message for a pharmacy technician or pharmacist to review.

“This has been very successful,” Phillips said, in decreasing phone calls that can distract or interrupt pharmacists who are reviewing orders and profiles in the central pharmacy.

She said the central pharmacy has had some success in attacking another big problem: entry of information into the incorrect patient’s profile.

Phillips attributed the problem to pharmacists diverting their attention from one profile to examine an issue or answer a phone call concerning another profile.

The partially successful answer, she said, has been to encourage the pharmacists to segregate some tasks.

With regard to pharmacy-compounded sterile preparations, the central pharmacy has a built-in medication safety zone, Phillips said. One of the ante-rooms for the i.v. preparation suite has a table where a pharmacist can inspect medications away from the compounding room, the rest of the pharmacy, and the telephones. This anteroom is not the one where personnel don garb and wash up.

Impetus. By issuing USP chapter 1066, the United States Pharmacopeial Convention (USP) partly fulfills a resolution adopted in 2005: to continue developing programs to promote safe medication use and disposal.

The chapter was developed by a subcommittee of USP’s Safe Medication Use Expert Committee.

Flynn, who has researched pharmacy facility design for about 20 years, said she has seen community pharmacies that have placed lines on the work counter to demarcate the prescription-inspection area. A pharmacist, when in this special area, is not to be interrupted.

She also has heard of pharmacies dedicating spaces to certain tasks in the medication-use process in order to im-

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prove safety. For example, a pharmacy may situate the order-entry pharmacist in an area separate from the rest of the pharmacy to prevent interruptions by telephone calls.

“But I’m not aware of anybody that’s specifically said, ‘Well, this is our medication safety zone,’” Flynn said. “I would like people to start doing that to draw attention to the importance of the physical environment for those tasks.”

She acknowledged that implementing a medication safety zone in a hospital pharmacy can be difficult because of the expectation for pharmacists to multitask.

“But I think that we do need to spend a little more time finding a solution to . . . those problems,” Flynn said. “I think you could have a zone for just inspection in a hospital pharmacy and dedicate that person to only that task and they wouldn’t have any phone-call responsibilities.”

Also, with an official zone, other personnel would know not to interrupt the person therein, she said.

According to a report on USP’s Medmarx database covering entries submitted in 2003–06, distractions were a contributing factor in 35.4% of the 14,258 medication errors involving look- or sound-alike drug names.

No other factor was identified more frequently as a situational, organizational, or environmental element that increased the opportunity for errors with drugs having names that look or sound alike.

Chapter 1066 is scheduled to appear as a revision bulletin on May 28 at www.usp.org and becomes official on October 1.

—Cheryl A. Thompson
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Maryland School of Pharmacy, XLHealth team up on medication management project

Medicare Advantage provider XLHealth has turned to the University of Maryland (UMd) School of Pharmacy to train the company’s pharmacists to provide medication therapy management (MTM) services for patients with serious chronic conditions.

Once trained, XLHealth’s pharmacists conduct in-depth reviews of the medication regimens with patients over the telephone, a process that takes about 40 minutes, according to the company. The pharmacists then work with the patients’ health care providers to optimize medication regimens, said Andrea Hershey, vice president of pharmacy at the Baltimore-based company.

The overall goal is to improve health outcomes and reduce hospitalization costs, she said.

“I would like to see what we’re doing here to be a model for what [the Centers for Medicare and Medicaid Services] thinks we should do for medication therapy management in Medicare,” Hershey said.

Although XLHealth has provided MTM services in the past, the work was done by outside pharmacists. For the new endeavor, Hershey said, the company has hired six full-time pharmacists and hopes to have six more on staff by this summer.

“We wanted to have pharmacists in-house to provide more complex medication therapy management services” than was possible using outside pharmacists, Hershey said. She said the preference is to hire pharmacists who have completed a residency program, but the overall need is for good clinicians who can provide complex patient care.

“I trained as a clinical pharmacist, so I had a vision for what services we should provide to our members,” Hershey explained.

A key factor in the training arrangement is Hershey’s working relationship with her former teacher, David Roffman, UMd professor of pharmacy practice and science. Roffman is a cardiology specialist and the coordinator for the XLHealth project, which runs through the end of this year and pays for all costs associated with conducting the training sessions.

Roffman held an introductory session on clinical decision-making in January for the XLHealth pharmacists. His subsequent sessions addressed heart failure, myocardial infarction, hypertension, and hyperlipidemia.

Roffman estimated that he spends about 15–20 hours a month on the teaching project.

“Right now, it’s a little intense for me because the first three or four months is all my stuff,” he said. In addition to preparing the cardiology lectures, Roffman also applies for continuing-education approval for the sessions.

He said his overall approach is to help the pharmacists identify suboptimal drug therapy regimens and intervene to improve patient care.

Each monthly training session consists of two parts—a 90-minute participatory lecture followed two weeks later by a one-hour case study on the previous topic.

During the case study, Roffman said, “we engage in a discussion of what’s the...