

Tips to reduce dangerous interruptions by healthcare staff

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INTERRUPTIONS CONTRIBUTE to medication errors, according to The Institute of Medicine's report, *To Err Is Human*.¹ At least 450,000 medication errors occur every year, and annual costs due to these errors are estimated at \$3.5 to \$29 billion.²

The Institute for Safe Medication Practices found that each interruption is associated with a 12.7% increase in medication errors.³ Kliger concludes that "the medication administration process is especially problematic because of the many environmental and workload issues that must be successfully monitored and mitigated during this process."² According to Westbrook et al., the entire medical, nursing, and administrative team should be held accountable for medication administration error rates.⁴

Interruptions appear to be the norm in healthcare, with studies indicating interruptions make up to 30% of all communications between healthcare providers.⁵ This article describes the impact of these interruptions on medication administration and practical steps to educate healthcare staff about the dangers of interruptions.

Impact of interruptions

Interruptions are defined as uncontrollable and unpredictable stressors that result in information overload and cognitive fatigue.⁵ All kinds of interruptions occur every day, but when they take place in the clinical environment, the results can be serious or deadly.⁶ Interruptions have a

Strategies for decreasing interruptions

As a result of interruption and distraction studies with data-supported research, several programs have been developed to enhance the safety of medication administration. Here are two examples. (For more information, see "Shh! Conducting a Quiet Zone Pilot Study for Medication Safety" in the September issue of *Nursing2012*.)

The "**No Interruption Zone**" (NIZ) has been recommended by the Institute for Safe Medication Practices as a strategy to enhance patient safety.¹⁰ The NIZ uses the aviation industry's concept of the "sterile cockpit."¹¹ A pilot research project in which nurses wore a bright yellow vest or sash that meant "don't interrupt this nurse" reduced errors by 47% in a 5- to 6-month period. The vest/sash brought about significant culture changes in nurses' ability to administer medications more efficiently and think more clearly.¹¹ According to Wood, nurses felt the use of the vest/sash brought a safer culture into nursing and made medication administration a more focused process. Once the purpose of the vest/sash was explained, patients and family members provided positive feedback.¹²

Kliger described a simple but effective approach used by one San Francisco hospital, which created a **protected hour** for nurses to focus exclusively on medication administration.² Unit secretaries informed callers why nurses weren't available during this time, charge nurses communicated with family members, healthcare providers delayed or changed their rounding schedule, and nurses stopped all conversation not directly related to patient or procedural safety. The percentage of correct doses administered increased from a baseline of 85% to 96%, a difference that was statistically significant.²

marked effect on human performance, causing diversion of attention, stress, fatigue, forgetfulness, and error.⁵

Interruptions include those from overhead pages, monitor alarms, rounding by healthcare providers, questions from other nurses, and family inquiries about patients.² Most patients and family members aren't aware of the many tasks that nurses perform and don't realize they're interrupting or distracting nurses. Healthcare workers may not consider the potential impact of their interruptions on others. Educating them about the hazards of

interruptions is as important as educating patients and family members. (To learn how some nurses are handling the problem, see *Strategies for decreasing interruptions*.)

Although some interruptions are necessary, most can be prevented or delayed. For example, nurses are often interrupted by healthcare staff asking about clinical information that they could find in the patient's medical record.⁴

Significance

Interruptions can impair a clinician's ability to stay focused on an activity or procedure. Researchers found that

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a time span of as little as 10 seconds can cause someone to forget to carry out a task.⁶

Returning to a disrupted task requires completion of the interrupting task and then regaining the context of the original task.⁷ With each interruption, the nurse returns to his or her previous task and has to spend time refocusing and evaluating what parts of the tasks were complete and what remains to be done.⁸

Frequency

The frequency of interruptions during medication administration suggests a lack of understanding of this process and the harmful effects of interruptions on patient safety.²

Moss et al. found that nurses were interrupted 65.5% of the time at least once during their medication preparation and administration task.⁹

Krischke reports that each time a nurse is interrupted during medication administration, the risk of error increases by 12%.⁸ Barclay reports the frequency of the interruptions is associated with increased severity of the error.⁷ Westbrook et al. concluded that four interruptions in the course of a single drug administration doubled the likelihood that the patient would experience a major mishap.⁴

Timing

According to Beyea, the timing of an interruption can result in a clinician missing a critical activity or thought,

and delays or omissions in treatment can result in negative outcomes for the patient.⁶ For example, if interrupted while administering a medication, the nurse may inadvertently omit the step of properly identifying the patient and subsequently make a serious error.

Urgency

Each time a nurse is interrupted for something nonurgent, the nurse is taken off task.⁸ Keep in mind, however, that some interruptions are essential for safety. For example, if a patient is receiving a drug but doesn't know why, the patient should interrupt to question the nurse.

Guidelines for healthcare staff

The authors strongly recommend that healthcare staff carefully analyze each situation to avoid any unnecessary distractions or interruptions. The authors suggest using the following rubric to assist healthcare staff in determining whether or not to interrupt the nurse. One of the authors of this article has used this rubric in the clinical setting to teach medication safety, prioritize needs, and improve organizational skills. Also see *Guidelines for healthcare staff to lessen interruptions*; this brief step-by-step guide can assist the healthcare staff to evaluate situations to determine if and when they should interrupt.

• **Situation:** What's the nurse currently doing? Is he or she giving a

medication, accepting prescriptions from a healthcare provider, or reporting a critical lab value?

• **Significance:** How significant is the reason for the interruption? Healthcare staff need to evaluate the significance of their request before interrupting. Only life-threatening situations are significant enough to cause an interruption when the nurse is preparing or administering medications.

• **Frequency:** Ask yourself, how often and how many times do I interrupt the nurse? Minimize interruptions by formulating a list of thoughts and questions before conferring with the nurse. This will improve time management for everyone.

• **Timing:** Nurses shouldn't be interrupted unnecessarily at certain times, such as during medication administration. Get help from other staff during this period. Delay questions or concerns until after the designated do-not-disturb time frame.

• **Urgency:** How urgent is the situation? Minor or nonurgent interruptions should be delayed until the nurse completes a task. Assess the situation or concern. Can it be addressed by other nursing personnel?

Spread the word

An interruption by anyone for any reason can be detrimental to both patients and healthcare staff. All members of the healthcare team must become aware of their unintentional contribution to errors. ■

Guidelines for healthcare staff to lessen interruptions

Assess the situation	What's the nurse doing?
Significance	How significant is my request?
Frequency	Do I have a list of questions so that I can make good use of the nurse's time?
Timing	Is this a designated do-not-disturb time frame?
Urgency	Have I prioritized my need(s)?

REFERENCES

1. Committee on Quality of Health Care in America, Institute of Medicine. Kohn LT, Corrigan JT, Donaldson MS, eds. *To Err Is Human: Building a Safer Health System*. Washington, DC: National Academies Press; 2000.
2. Klinger J. Giving medication administration the respect it is due: comment on: "association of interruptions with an increased risk and severity of medication errors." *Arch Intern Med*. 2010;170(8):690-692.

3. Institute for Safe Medication Practices (ISMP). Safe practice environment chapter proposed by USP. *ISMP Medication Safety Alert! Acute Care*. 2008; 13(24):1-2. <http://www.ismp.org/newsletters/acutecare/articles/20081204.asp>.

4. Westbrook JI, Woods A, Rob MI, Dunsmir WT, Day RO. Association of interruptions with an increased risk and severity of medication administration errors. *Arch Intern Med*. 2010;170(8):683-690. <http://archinte.ama-assn.org/cgi/content/full/170/8/683>.

5. Nykolyn L. The safety net: a nursing perspective. Effects of fatigue and interruption. *CLPNA CARE Magazine*. 2010;24(2). <http://www.clpna.com/LinkClick.aspx?fileticket=dqjSg1XBsNU%3d&tabid=146>.

6. Beyea S. Distractions, interruptions, and patient safety. *AORN J*. 2007;86(1):109-112.

7. Barclay L. Interruptions linked to medication errors by nurses. 2010;23(2):72-77. <http://www.medscape.com/viewarticle/720803>.

8. Krischke MM. Decreased interruptions lead to more time at the bedside. 2011. http://www.nursezone.com/Nursing-News-Events/more-news/Decreased-Interruptions-Lead-to-More-Time-at-the-Bedside_36554.aspx.

9. Moss J, Berner E, Bothe O, Rymarchuk I. Intravenous medication administration in intensive care opportunities for technological solutions. *AMIA Annu Symp Proc*. 2008;6:495-499.

10. Anderson P, Townsend. Medication errors: don't let them happen to you. *Am Nurse Today*. 2012;5(3):23-27.

11. Anthony K, Wienczek C, Bauer C, Daly B, Anthony MK. No interruptions please: impact of a no interruption zone on medication safety in intensive care units. *Crit Care Nurse*. 2010;30(3): 21-29. <http://ccn.aacnjournals.org/content/30/3/21.full>.

12. Wood D. Decreasing disruptions reduces medication errors. 2009. <http://www.nursezone.com/Nursing-News-Events/more-news.aspx?ID=18693>.

RESOURCES

Bankhead C. Interruptions risk medication errors by nurses. 2010. <http://www.medpagetoday.com/HospitalBasedMedicine/Hospitalists/19774>.

Biron AD, Loiselle GC, Lavoie-Tremblay M. Work interruptions and their contribution to medication administration errors: an evidence review. *Worldviews Evid-Based Nurs*. 2009;6(2):70-86.

Kalisch BJ, Aebersold M. Interruptions and multitasking in nursing care. *Jt Comm J Qual Patient Saf*. 2010;36(3):126-132. <http://www.ncbi.nlm.nih.gov/pubmed/20235414>.

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