

Interruptions associated with medication errors by nurses

April 26 2010

Nurses who are interrupted while administering medication appear to have an increased risk of making medication errors, according to a report in the April 26 issue of *Archives of Internal Medicine*.

Laboratory studies have demonstrated that interruptions during a task contribute to inefficiency and errors, the authors write as background information in the article. "Experimental studies suggest that interruptions produce negative impacts on memory by requiring individuals to switch attention from one task to another," the authors write. "Returning to a disrupted task requires completion of the interrupting task and then regaining the context of the original task."

Medication errors occur as often as once per patient per day in some settings, and approximately one-third of harmful [medication errors](#) are thought to occur during medication administration. Johanna I. Westbrook, Ph.D., of the University of Sydney, Australia, and colleagues studied nurses preparing and administering medications in six wards of two major teaching hospitals. Interruptions were noted and two types of errors were tracked: procedural failures, including failure to read labels, check patient identification or record administration on medication chart; and clinical errors, including wrong drug, dose, formulation or strength.

The 98 nurses were observed while preparing and administering 4,271 medications to 720 patients over 505 hours from September 2006 through March 2008. Only 19.8 percent of these administrations were

free of both kinds of errors. At least one procedural failure occurred in 74.4 percent of administrations and at least one clinical failure in 25 percent. Interruptions occurred during 53.1 percent of administrations.

"Each interruption was associated with a 12.1 percent increase in procedural failures and a 12.7 percent increase in clinical errors," the authors write. When nurses were not interrupted, procedural failure rates were 69.6 percent and clinical error rates were 25.3 percent, compared with procedural failure rates of 84.6 percent and clinical error rates of 38.9 percent if they were interrupted three times.

In addition, errors became more severe as the number of interruptions increased. "Without interruption, the estimated risk of major error was 2.3 percent; with four interruptions this risk doubled to 4.7 percent," the authors write.

"The converging evidence of the high rate of interruptions occurring during medication preparation and administration adds impetus to the need to develop and implement strategies to improve communication practices and to reduce unnecessary interruptions within ward environments," the authors write. "While it is clear that some interruptions are central to providing safe care, there is a need to better understand the reasons for such high interruption rates."

Simple strategies to reduce interruptions could include easy access to whiteboards or other sources of information, along with having nurses wear vests with "do not interrupt" messages on them while conducting medication rounds, the authors note.

Provided by JAMA and Archives Journals

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April 2024 from <https://medicalxpress.com/news/2010-04-medication-errors-nurses.html>

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