

Patient Safety Tip of the Week

August 30, 2016

Can You Really Limit Interruptions?

The impact of interruptions and distractions in facilitating human error and adverse events is well established. We've done multiple columns, listed below, on how interruptions and distractions affect nurses, physicians, pharmacists, clerical staff, and really all healthcare workers.

Strategies to reduce and minimize interruptions and distractions are thus important in potentially avoiding adverse patient events. But how successful are those strategies? There is limited literature on the efficacy of such strategies. But a recent study ([Flynn 2016](#)) assessed the impact of several strategies on reducing interruptions during medication administration. Flynn and colleagues have done an excellent job of summarizing the literature on interruptions and their impact on medication administration and chronicling those interventions which are evidence-based:

- Hourly patient rounds
- Scripts for triage of phone calls
- Protected time for passing medications without interruptions
- Signage to remind staff to limit interruptions
- "No interruption zone"/"quiet zone" established in medication rooms
- Phone calls to nurses limited during medication administration
- Nurses don visible wear as a nonverbal cue that they are administering medications and are not to be disturbed
- Distribution of patient/family education materials about limiting interruptions during medication administration

They piloted these interventions on two progressive cardiac care units (PCCU's) and used a third PCCU as a control. They found that interruptions decreased significantly (from 23% to 4%) and medication errors decreased significantly (from 11% to 3%) in one PCCU after implementation of the evidence-based strategies. Total interruptions did not change on the second PCCU but avoidable interruptions decreased 83% and 53%, respectively, in the two intervention PCCU's after implementation of the evidence-based strategies. Total interruptions actually increased in the third PCCU which served as the control.

Several problems related to the study design limit its ability to conclude that a reduction in interruptions translated to a reduction in medication errors. Most notable are the facts

that (1) one of the 2 intervention units had a very low rate of medication errors at baseline and (2) there was a significant reduction in medication errors on the control unit. In addition, the study took place before barcoding was adopted at the hospital.

While those do limit their overall conclusions, there are some valuable lessons learned in this study. One is that potentially avoidable interruptions could, indeed, be reduced. Phone calls were a primary source of interruptions and these were clearly reduced. It took teamwork to ensure that the nurse passing meds had few interruptions. The unit secretary managed most of the communications with visitors and clerical requests from physicians or other healthcare workers. The charge nurse would address patient care issues with physicians and other healthcare workers. And hourly rounding activities were alternated so they coordinated with peak times for medication administration.

The nurse passing meds wore a yellow safety sash to designate “do not disturb” and cradled his/her phone to avoid phone interruptions. In addition, a colored magnetic icon appeared on the nurse assignment board so that all could see which nurse was passing meds and should not be disturbed. That magnetic icon would be removed when the nurse was finished passing meds and the charge nurse would update the nurse on any logged messages or other updates.

The most frequent source of interruptions was phone calls and there was a **48% reduction in interruptions from phone calls** after the intervention. An important lesson learned was that of the interruptions due to **unavailability of resources** (the second most frequent cause of interruptions) the nurse having to stop and get water or a cup for the patient accounted for 85% of interruptions in this category. That sounds like a system issue with some relatively easy and inexpensive solutions! Most face-to-face interruptions were related to patient care issues. Interestingly, only 7% of interruptions were by physicians. And, although responses of patients and their families were “overwhelmingly positive” when told of the intervention, patient-related interruptions were no different before and after the intervention.

Another important lesson had to do with **sustainability**. Once funding for the initial pilot project ran out, practices tended to revert back to the old ways. Only when a new initiative took the evidence-based interventions to all nursing care units did practices improve again. In that broader implementation, the yellow safety sash was replaced simply with the barcoding scanner serving as the flag that the nurse was administering medications. Data were not provided on the hospital-wide impact of the broader intervention.

The Flynn article nicely outlines in table form with annotations the numerous studies in the literature on the impact of interruptions. That alone makes this article worth your time. But the article has the valuable lessons learned as noted above and has good descriptions of the communications strategies required to make the interventions successful.

Perhaps the one thing missing in this study (and it is no different from most other studies on interruptions) is that the medication error rate was the only patient outcome parameter measured. The total adverse event rate should also be reported in such studies to ensure that the intervention did not have unintended consequences on aspects of care other than medication safety.

Prior Patient Safety Tips of the Week dealing with interruptions and distractions:

- August 25, 2009 “[Interruptions, Distractions, Inattention...Oops!](#)”
- November 3, 2009 “[Medication Safety: Frontline to the Rescue Again!](#)”
- December 15, 2009 “[The Weekend Effect](#)”
- May 4, 2010 “[More on the Impact of Interruptions](#)”
- October 12, 2010 “[Slowing Down in the OR](#)”
- March 8, 2011 “[Yes, Physicians Get Interrupted Too!](#)”
- July 31, 2012 “[Surgical Case Duration and Miscommunications](#)”
- August 28, 2012 “[New Care Model Copes with Interruptions Better](#)”
- November 27, 2012 “[Dealing with Distractions](#)”
- April 16, 2013 “[Distracted While Texting](#)”
- May 21, 2013 “[Perioperative Distractions](#)”
- July 1, 2014 “[Interruptions and Radiologists](#)”
- November 2014 “[More Radiologist Interruptions](#)”
- March 17, 2015 “[Distractions in the OR](#)”
- July 21, 2015 “[Avoiding Distractions in the OR](#)”

References:

Flynn F, Evanish JQ, Fernald JM, et al. Progressive Care Nurses Improving Patient Safety by Limiting Interruptions During Medication Administration. Crit Care Nurse 2016; 36: 19-35

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