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INTERRUPTIONS AND MEDICATION: IS 'DO NOT DISTURB' THE ANSWER?

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Interruptions and medication: is 'Do not disturb' the answer?

Medication related incidents and errors continue to be a significant patient safety issue in health care settings internationally and despite decades of research and quality improvement initiatives, we have failed to identify innovative and sustainable solutions. The importance and significance of this problem not only challenges us, but emphasises the need to develop and implement sustainable interventions that are realistic and appropriate for the clinical setting. Nurses are not only the largest group of health professionals who administer medications, but are also considered to be in the best position to recognize and prevent medication errors before patient safety is compromised (Flynn et al. 2012). Hence the need to adequately prepare student nurses by providing appropriate learning opportunities.

In 2009 in New South Wales (NSW) (Australia) public hospitals there were 21,717 reported medication and intravenous (IV) fluid incidents; 38% of which occurred within the administration phase (Clinical Excellence Commission & Health. 2011). There is a paucity of peer reviewed literature that accurately reports current Australia wide statistics that include both oral and IV incidents. However, some relevant contemporary data was submitted in 2008 as part of a submission to the National Health and Hospitals Reform Commission. One submission stated there are between 77,000 and 96,000 preventable medication/IV fluid errors per annum, and it was further estimated that 27% of these errors caused patient harm (Hospira Pty Ltd 2008). This problem is not unique to the Australian context, it aligns with a similar situation in many other countries including North America, the United Kingdom, and Canada (Kohn, Corrigan & Donaldson 2000; Smallwood 2000). In the North American context, an average of 450,000 preventable medication errors is estimated each year (Flanders & Clark 2010). However, it must be acknowledged that these figures may not be accurate. For every reported medication error or incident, there are many more that go undetected and unreported (Choo, Hutchinson & Bucknall 2010; Flynn et al. 2002; Hughes & Blegen 2008; McBride-Henry & Foureur 2006).

Projected estimates of up to two errors per patient per day (Wu, Pronovost & Morlock 2006) or one in five administrations of medications resulting in error, (Reid-Searle et al. 2011) have been documented. The associated cost Australia wide for medication error related hospital admissions is estimated to be $660million/annum (Roughead & Semple 2009). The costs accrue from a combination of increased lengths of stay, patient mortality and personal impacts including post discharge disability, and emotional distress (MacDonald 2010; Roughead & Semple 2009). In addition to the burden for

patients and their families, there are also costs to nurses and the health care system. These costs may be professional, financial, physical and/or emotional (Flanders & Clark 2010).

Interruption or distraction to the administering clinician during the process of medication administration has been widely identified as a leading cause of errors (Hughes & Blegen 2008; Nichols et al. 2008; Westbrook et al. 2010). Westbrook et al (2010) reported over 50% of observed medication administration encounters were interrupted in some way and nearly 85% of interrupted encounters resulted in either clinical error (e.g. wrong dose, timing, IV administration rate) or procedural error (e.g. not checking patient identification., inadequate attention to hand washing) or both (Westbrook et al. 2010). Palese et al. (2009) observed one interruption for every three patients given medication.

Even the processes through which nurses attempt to control and reduce the effects of interruptions can be disruptive. Requests for assistance by other team members, even if postponed by the administering nurse, requires suspension of the medication administration task, involving loss of concentration, before resumption of the process can occur. However, on the flip side, interruptions can constitute a reason nurses intercept errors. Patients or their relatives may ask questions that provide cues for reflection or additional checking. Questioning is something that should be encouraged as it can assist patients to understand the appropriate use of their medications. If open channels of communication are nurtured between nurse and patient it places the nurse in an ideal situation to both allay patient concerns and/or intercept possible errors before they occur (Flynn et al 2012).

Managing interruptions and distractions necessitates an ability to prioritise according to individual patient needs. To do this, nurses need to be able to effectively multitask, in other words; to be able to think and do, or think and listen at the same time (Schmalenberg et al. 2008). As a response to research findings positioning interruptions as culpable, considerable current research foci remains on the prevention of errors, often with the same goal in mind – nurses who are dispensing or administering medications should be free to administer medications with minimal interruptions or distraction (Pape 2011; Relihan et al. 2010).

The “sterile cockpit rule”, has been offered as a basis for several interventions in the healthcare environment, suggesting eradicating interruptions during administering of medications will prevent errors (Flanders & Clark 2010). The sterile cockpit rule was successfully initiated in the aviation industry in the 1980’s in an effort to decrease distractions that had been identified as a threat to safety in the cockpit area. However, both the clinical environment and nature of nursing practice do not afford nurses the same opportunities to isolate themselves from communications with the people they are caring for, making transfer of this concept difficult. Strategies such as signage and wearing

tabards or sashes that say 'do not disturb', safety checklists, and the instigation of markings on the floor to indicate 'no go and quiet zones' are currently being trialled, all with varying levels of success (Flanders & Clark 2010; Kyle et al. 2010; Relihan et al. 2010).

These approaches deny the complex and multifaceted environment of the health care system and the interactive, dynamic and reflexive process of the nurse- patient interaction. Considering medication administration outside of the context of the broader health care environment is unlikely to contribute to viable and sustainable interventions. Greater consideration needs to be given to how nurses, patients, relatives and other health care workers respond to and embrace measures that isolate the process of medication administration from the broader clinical interaction. It is also important to consider other associated issues; such as the infection control issues surrounding wearing tabards that are not laundered or cleaned, signage that may not be read or adhered to, and quiet zones that are hard to police.

In choosing to display signage, either in the form of posters or articles of clothing, that alert people to 'not disturb' the nurse while administering medications there needs to be awareness of the message that is being sent and to whom it is intended. Nursing is a communication based craft that often necessitates immediate and acute care. By its nature, nursing is a dynamic, multi-tasking, people oriented profession that occurs alongside frequent interruptions (DeLucia, Ott & Palmieri 2009). It could be argued that in asking patients and their relatives not to 'disturb' the nurse, we are going against the very core and essence of what nursing embodies – communication-based compassionate and responsive care. Compassion and empathy have long been underpinning elements of nursing (Cornwell & Goodrich 2009; Sabo 2006) and as we progress towards attaining levels of high quality technical clinical care, it is crucial that this core value of compassion not be eroded (Straughair 2012). Caring is also strongly associated with nursing, and accessibility or being available to patients is associated with enacting the caring role (Jackson & Borbasi 2010).

The longer term impact of these strategies is also an issue of concern, as over time the efficacy of these approaches diminishes. (Bennett, Dawoud & Maben 2010). Technology such as smart pumps, electronic dispensing, computerised physician order entry, bar code point of care, and dose error reduction systems although having been endorsed by many as effective error reduction methods (Forni, Chu & Fanikos 2010) , do not in and of themselves reduce interruptions.

It has been reported that up to 40% of nurses' time is engaged in administering medications (Hughes & Blegen 2008)**.** This raises the question as to whether an intervention that asks for no interruptions or disturbances during this amount of time is realistic. Furthermore, given that many nurses greatly value direct patient contact and engagement with patients, there also needs to be consideration of

how reducing the nature and frequency of patient contact with nurses might affect nurses' job satisfaction.

While testing strategies such as signage displays, no interruption zones and electronic dispensing, it is important to acknowledge that interruptions continue to occur and so nurses are required to be able to deal with these while still maintaining safety for patients. Yet there remains a lack of literature addressing how nurses learn to prioritise and cope with interruptions. Given what is known about the relationship between interruptions and nurse medication error, it is important that interruptions and distractions be addressed as part of nursing curricula. This is crucial in adequately preparing nurses for the 'real world' of nursing practice. Though there is a paucity of literature in the area of undergraduate nursing education in relation to managing interruptions during medication administration and the relational effects on error rates, research by Reid-Searl, Moxham and Happell (2010) indicated that 32% of student nurses in their sample reported being involved themselves in either a 'near miss' (p. 228) or error while administrating medication in the clinical environment.

Safe and effective administration of medications is a cornerstone of nursing practice and draws on processes requiring multiple clinical judgments, professional vigilance and critical thinking during all phases of the process (Eisenhauer, Hurley & Dolan 2007). At the undergraduate level, tailored, realistic and focused learning that involves critical thinking to problem solve and make decisions is essential, and could better prepare nurses to fulfill the task of medication administration, and navigate deviations such as distractions and interruptions confidently and safely. Such approaches are likely able to afford benefits for patients, nurses and others involved in medication administration, and the broader health care system.

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