

Impact of a No Interruption Zone on Nursing Interruptions While Administering Medication

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INTRODUCTION

Interruptions of nurses during patient care activities, such as medication administration, are a common occurrence. This can decrease the efficiency of nursing workflow, and has potential to lead to failure to maintain patient safety. Patients, family members, interprofessional staff, and the nurse him/herself are often sources of interruptions¹.

Limited research has shown that interventions implemented to diminish interruptions during medication administration decreases the number of interruptions and errors that occur².



The purpose of this study was to determine if implementation of a "No Interruption Zone" (NIZ) protocol, during the medication administration process, decreased nurse interruptions and reduced departmental medication errors/events. An interruption was defined as any event causing the nurse's attention to be diverted away from administering medication.

METHODS

Study Design

- Quasi-experimental, observational study; IRB approved
- Subjects, registered nurse volunteers, observed on Orthopedic and Surgical units
- Data collection in two phases:
 - Phase I: Pre-NIZ implementation
 - Phase II: Post-NIZ implementation

Sample

- N=28 observations (5 subjects observed)
- Equal no. observations in both study phases on both units

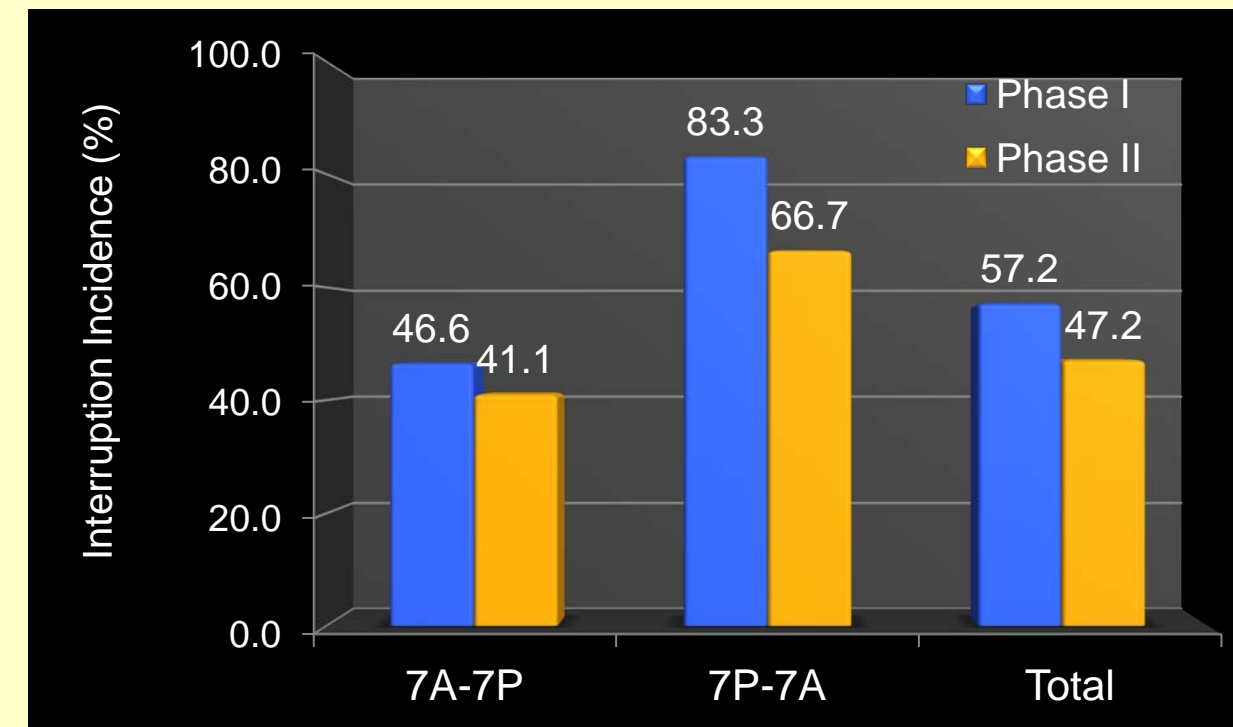
Data Collection

- Medication doses, interruptions (n), and location (medication room, transport, and patient room)
- Interruption types: conversations, phone calls, etc.
- Interruption sources: patient, staff, etc.
- Pre- and Post-NIZ nurse perspective questionnaires

No Interruption Zone

- Orange mat in medication room
- Orange slap band worn by nurses
- Orange flags on mobile computers

INTERRUPTION INCIDENCE BEFORE & AFTER NIZ IMPLEMENTATION



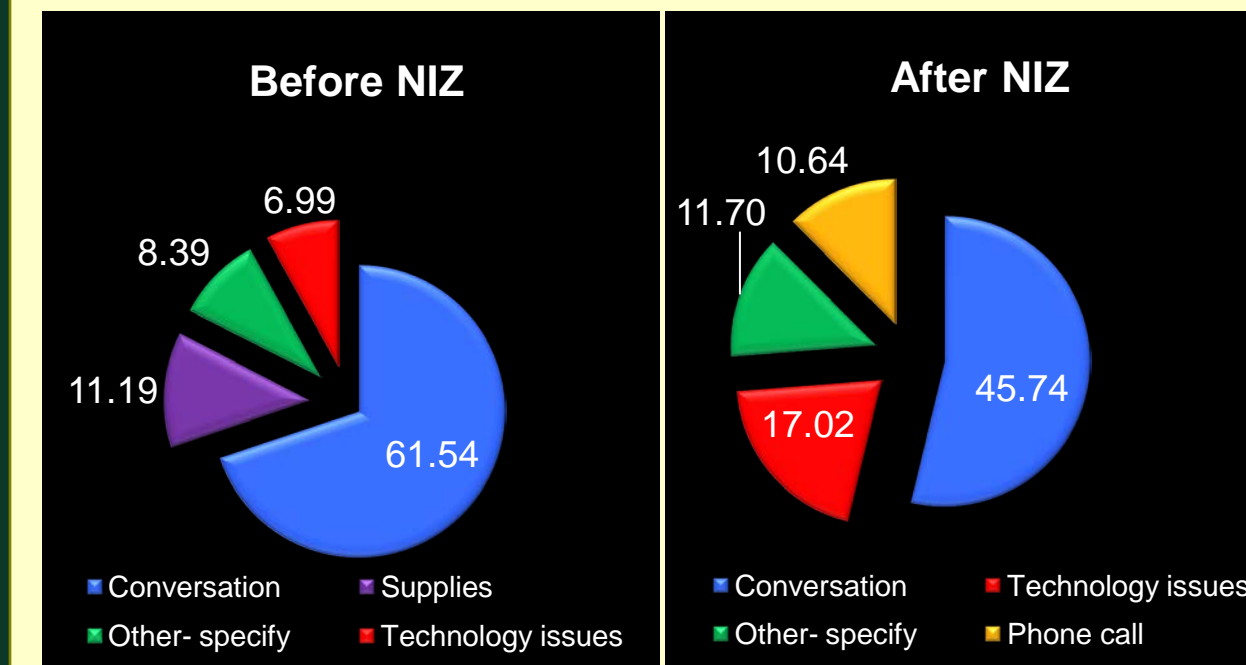
- Interruptions decreased for both day and night shifts
- Mean number of interruptions evaluated by shift revealed 7P-7A shift had significantly fewer interruptions (Phase I: n=9.7; Phase II: n=5; p=.013) after NIZ implementation

SOURCES of INTERRUPTIONS

Interruption Source	Before NIZ %	After NIZ %	Change %
Self	17.5	10.6	6.8
Patient	16.8	18.1	-1.3
Supplies	11.2	8.5	2.7
Nurse Aide	8.4	2.1	6.3
Ancillary Staff	8.4	4.3	4.1
Another Nurse	7.7	9.6	-1.9
Other	7.7	10.6	-2.9
Unit Secretary	7.0	9.6	-2.6
Family	5.6	5.3	.3
BMV/VDI	5.6	17.0	-11.4
Equipment alarms	2.8	2.1	.7
Physician	1.4	2.1	-.7

- Interruptions by self showed the largest decrease (6.8%), after NIZ implementation, followed by nurse aide (6.3%) and then ancillary staff (4.1%)
- Unexpectedly, interruptions due to technology increased substantially in Phase II

MOST PREVALENT INTERRUPTION TYPES



- Conversation, the most common interruption in both phases, decreased in Phase II
- Technology issues more than doubled in Phase II – an unexpected finding

INTERRUPTION LOCATION

Location	Before n (%)	After n (%)	χ^2 Statistic	p Value [†]
Medication Room	17 (11.9)	14 (14.9)	6.55	.038
Transport	40 (28.0)	13 (13.8)		
Patient Room	86 (60.1)	67 (71.3)		
Total Interruptions	143	94		

[†]Significance determined at 95% confidence

- Most interruptions occurred in patient room
- Interruptions during transport from the medication room to the room dropped by 50% in Phase II compared to Phase I

SUMMARY & IMPLICATIONS

SUMMARY

- 15% fewer interruptions observed with the "NIZ" on night shift – statistically significant finding
- Self-generated interruptions decreased ~ 7% after NIZ
- NIZ education more effective (nurse aides, ancillary) with certain staff than others (unit secretaries)

IMPLICATIONS

- With staff nurses more aware of what interrupts them, the potential exists to increase productivity and patient safety
- Focus on sustainability of interruption prevention strategies

NURSING SURVEY RESPONSES

Survey Statement	Before NIZ	After NIZ
Medication events are preventable.	94% A/SA	90% A/SA
There is nothing I can do to limit the number of interruptions that occur during the med admin process.	44% D/SD	30% D
Interruptions during the med admin process are preventable.	50% A/SA	30% A
Multidisciplinary team members (i.e., MD, PT/OT, dietary, pharmacy, lab, radiology, etc) acknowledge the importance of the med admin process.	56% D/SD	60% D

A: agree, SA: strongly agree, D: disagree, SD: strongly disagree

- Respondents overwhelmingly agreed medication events are preventable, but over 50% pre-NIZ and 70% post-NIZ survey nurses did not believe they could influence the number of interruptions
 - Study Findings: decrease in interruptions observed
- Majority of nurse respondents disagreed multidisciplinary team members acknowledge the medication process
 - Study Findings: allied professionals and physicians accounted <7% of post-NIZ implementation interruptions
- Respondents reported patient needs to be their most frequent type of interruption
 - Study Findings: nurses interrupted for patient requests infrequently... 2.1% Phase I and 0% Phase II

REFERENCES

- Anthony K, Wiencek C, Bauer C, Daly B, Anthony M. No interruptions please impact of a no interruption zone on medication safety in intensive care units. *Crit Care Nurse*. 2010;30(3):21-29.
- Nguyen E, Connolly P, Wong V. Medication safety initiative in reducing medication errors. *J Nurs Care Qual*. 2010;25(3):224-230.

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