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Reducing Avoidable Interruptions During the Medication Administration Process

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Reducing Avoidable Interruptions During the Medication Administration Process

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Abstract

Background: Medication safety and preventing medication errors continues to be a high priority

for hospitals and clinics, as medication errors are the most common and most costly errors in

U.S. hospitals (Kliger, 2010, p. 690). Kliger (2010) reported that 450,000 medication errors

occur annually, costing hospitals approximately $3.5 to 29 billion dollars a year. Furthermore,

Ching, Long, Williams & Blackmore (2013) estimated that 770,000 injuries and deaths occur

each year as a result of medication errors.

Purpose: To decrease medication errors by reducing the number of phone call and call

light interruptions during the medication administration process.

Methods: Lippitt's Change Theory was used to address the objective of decreasing

medication errors by reducing the amount of phone call interruptions during the medication

administration process. Initial audits were completed to observe the medication administration

process on the medical-surgical/trauma unit. In addition, nurse surveys were conducted to

further assess the opinion and perspective of the nurses working on the unit, and what they felt

were the significant interruptions they faced while administering medications. Based on the

initial audits and the nurse surveys, the aim of the project was focused on reducing phone call

and call light interruptions by educating the unit clerk on how to triage incoming phone calls and

call lights.

Therefore, in order to reduce the amount of phone call interruptions, a unit clerk packet

was created with a unit clerk screening algorithm, overhead script, message sheet, and nurse

sign-up sheet. In addition, pre-implementation and post-implementation data was collected on

the number of pages and call lights, whether the page or call light was urgent, and whether the

nurse was paged or called over the intercom system.

Results: The initial medication administration audits demonstrated that interruptions were significant during medication pass time. Furthermore, based on the nurse surveys and secondary audits of the medication administration process, it was found that phone calls were the most common interruption during medication pass time. Following the implementation of the unit clerk packet there was a 32% decrease in the amount of phone call and call light interruptions during the medication administration process.

Conclusion: Overall, with the implementation of the unit clerk packet and education of the unit clerk on how to triage phone calls and call lights, it may be concluded that this intervention can decrease the amount of interruptions during the medication administration process. However, medication errors continue to be a problem in U.S. hospitals, thus further research is necessary to investigate how to decrease errors and improve patient safety. It is suggested that further studies should be conducted, and recommendations from the literature should be taken into consideration.

Keywords: medication administration, medication errors, interruptions, unit clerk

Reducing Avoidable Interruptions During the Medication Administration Process

Statement of the problem

Medication safety and preventing medication errors continues to be a high priority for

hospitals and clinics, as medication errors are the most common and most costly errors in U.S.

hospitals (Kliger, 2010, p. 690). Kliger (2010) reported that 450, 000 medication errors occur

annually, costing hospitals approximately \$3.5 to 29 billion dollars a year. Furthermore, Ching,

Long, Williams & Blackmore (2013) estimated that 770,000 injuries and deaths occur each year

as a result of medication errors. These statistics demonstrate the current issue of medication

errors and the impact upon patient care.

The medication administration process is a crucial aspect of patient safety.

Unfortunately, the medication administration process can be compromised by various

interruptions at every stage of the process. These interruptions include phone calls, nursing

colleagues, physicians and other healthcare employees working with the patient, and broken or

lack of equipment. Biron, Lavoie-Tremblay, & Loiselle (2009) reported that nurses stated that

interruptions were a significant contributor to medication administration errors. Thus, it is

imperative to evaluate what can be done to reduce the amount of interruptions nurses face while

administering medications in order to decrease medication errors and provide safe patient care.

Rationale

A needs assessment was performed at an urban hospital in Northern California on a

general medical-surgical/trauma unit. During the assessment, it was revealed that there was no

standardized medication administration process. Without a standardized process, the nurses may

administer medications based on personal preference and an individual basis, rather than best

practice supported by the literature. In addition, without a standardized medication

administration process, other health care professionals and employees on the unit do not know

when a nurse is administering medications. Both of these factors can contribute to errors,

therefore the medication administration process was audited in the interest of medication errors

on the general medical-surgical/trauma unit.

Root Cause Analysis

A root cause analysis was performed to determine potential factors contributing to

medication errors on the medical-surgical/trauma unit (See Appendix A for the Root Cause

Analysis). The five major factors included individual (staff) factors, equipment and supplies,

cultural aspects, organizational structure, and team factors.

First, individual (staff) factors- it was found that not all registered nurses (RNs) took the

computer on wheels (COW) into the medication room, or used the supplied computer in the

medication room to verify patient medications. In addition, many RNs wrote down patient

medications on a piece of paper, and took that piece of paper into the medication room as a

source of verification.

Moreover, the themes presented with equipment and supplies included broken medication

scanners, computer system malfunctions, unidentifiable patient identification band, no water at

the bedside, no intravenous (IV) bags or tubing available, medications without a barcode, and no

available interpreter phone. Another contributing factor was the culture of the unit. Many RNs

were found conversing in the medication room about non-health related topics, and several RNs

were on their cell phone while waiting in line to access the medication room, and while inside the medication room.

Next, the organizational structure of the medical-surgical/trauma unit revealed RNs having to wait in line to access the medication room. It was also observed that nurses had to wait to administer medication(s) to patients' because a physician, respiratory therapist, or physical therapist was caring for the patient during the scheduled medication pass time. The RNs also experienced several interruptions from physicians, respiratory therapists, physical therapists, nursing colleagues, and the unit clerk. Most commonly they would ask the nurse questions, and provide information or updates about the patient and the plan of care. It was also found that the RNs needed to care for other patients that had urgent issues that took priority over medication administration. In addition, RNs had to wait for another RN to check the medications that required a double RN check.

Finally, team factors were identified. First, RNs were not able to administer medications because the pharmacy did not provide the medication on time to the Omnicell, refrigerator, or medication cassette. In addition, team rounds were conducted during medication pass time, therefore RNs had to postpone administering medications. Overall, the root cause analysis revealed many contributing factors that may contribute to medication errors.

Literature Review

Medication safety and preventing medication errors is a priority and focus of many healthcare organizations including The Joint Commission and the Institute for Safe Medication Practices (Freeman, Mckee, Lee-Lehner & Pesenecker, 2013, p. 176). As Craig, Clanton, &

Demeter (2014) explained, the medication administration process is a "high-risk procedure," and a focus on efforts to prevent errors should be investigated in order to enhance patient safety.

In the White Vest study, Craig et al. (2014) aimed to investigate the most common interruption during the medication administration process. In addition, they examined the effect of a multi-faceted intervention that included: a white vest worn by nurses with the following written in red on the back, "Please do not interrupt while passing medications," unit clerk education on triaging phone calls, and overnight staff education on patient transport. The results demonstrated that the most frequent interruptions were staff interruptions, phone calls, and seeking medical supplies (Craig et al., 2014, p. 253). Independently, the white vest, unit clerk education, and education on patient transport did not generate significant findings. Thus, Craig et al. (2014) suggested that all three interventions coupled together as a multifaceted intervention may significantly reduce the number of interruptions nurses experience during the medication administration process, and ultimately decrease the number of medication administration errors.

Furthermore, Freeman et al. (2013) conducted a quality project to study whether the implementation of a bundle of interventions would help reduce interruptions during medication administration.

The bundle Freeman et al. (2013) created included nine different components: (1) Lighted lanyards worn by nursing staff during medication administration to indicate they should not be interrupted, (2) transitioning the medication room into a No Interruption Zone, (3) phone scripts for unit clerks to triage calls during peak medication administration times, (4) patient and family educational brochures provided on admission, (5) signs placed on each beside table regarding medication safety, (6)

electronic medication administration record (eMAR) review during nurse-to-nurse handoff, (7) a scripting car to encourage dialogue between nursing staff and patients and families to discuss medication safety and the purpose of the lighted lanyard, (8) letters to stakeholders, and (9) education to unlicensed assistive personnel (UAP) to round, answer call lights, and respond to alarms during peak medication administration times. (p. 178-179)

The study revealed that after implementing the bundle of interventions, both the number of interruptions during medication administration and the number of medication errors decreased (Freeman et al., 2013, p.183).

Moreover, Nguyen, Connolly & Wong (2010) stated that the causes of medication errors and the contributing factors are imperative to understand in order to make the necessary changes to prevent medication administration errors. Therefore, Nguyen et al. (2010) aimed to study whether a 'Medication Pass Time Out' would be effective in reducing medication errors at a Northern California hospital. The time out initiative was a one-hour time frame during medication administration process where no interruptions were to occur, allowing the nurse to focus solely on administering medications. The only exceptions were emergency situations. All other phone calls, pages, and physician inquiries were delayed, and nursing assistants and resource nurses assisted with patient needs. The study revealed that taking a 'Medication Pass Time Out' could reduce the number interruptions, as medications administered without interruptions at baseline, 6 months, and 1 year improved from 81% to 99% (Nguyen et al., 2010, p. 224).

In addition, Ching et al. (2013) performed a quality improvement project at Virginia Mason Medical Center to address medication administration safety. This study combined the Collaborative Alliance for Nursing Outcomes (CALNOC) and Lean quality improvements to implement six safe practices designed to prevent medication errors.

The six safe practices implemented by Ching et al. (2013) were:

(1) comparing medication administration record, (2) labeling medication, (3) checking two forms of patient identification, (4) explaining medication to patient, (5) charting medication immediately, (6) protecting the process from distractions and interruptions. (p. 195)

In order to specifically address telephone interruptions, Ching et al. (2013) created a triage tool for the unit secretary to help differentiate between urgent and non-urgent phone calls. In addition, a message template sheet was created for the unit secretary to take non-urgent messages while the nurse was administering medications. Lastly, a visual control was implemented for the nurses to alert the unit secretary when they were starting and ending the medication administration process (Ching et al, 2013, p. 198). Following this intervention, Ching et al. (2013) reported a 34% decrease in telephone interruptions during medication pass times.

Furthermore, Biron et al. (2009) conducted a study that assessed the work interruptions nurses experienced during the medication administration process. They observed 102 medication rounds and recorded the work interruptions nurses encountered. Biron et al. (2009) defined work interruptions as a "break in task activity," and were characterized by: source, secondary task, location, strategies, and work interruption start and end time. It was found that over 59 hours 2

minutes of medication administration, 374 work interruptions were observed (Biron et al., 2009, p. 330). Thus, it was concluded that work interruptions during the medication process are frequent and are a great risk to patient safety; therefore Biron et al. (2009) recommended that improving the medication administration process is necessary.

Finally, in order to improve the reliability of the medication administration process, Kliger, Blegen, Gootee & O'Neil (2009) conducted a study at seven hospitals in the San Francisco Bay Area with the objective to develop nurse leadership skills. Each hospital created project teams that worked to improve the medication administration process.

Kliger et al. (2009) reported that each team focused on six safety processes, which included:

Comparing medication to the medication administration record, keeping medication labeled from preparation to administration, check two forms of patient identification, explain drug to patient, chart immediately after administration, and protect process from distractions and interruptions. (p. 604)

Kliger et al. (2009) reported that one team addressed phone call interruptions by creating a phone script for the unit clerk to say when a nurse was administering medications. In addition, during the hour of medication administration, "all calls- whether from patients, families, pharmacists, or physcians- were held, and overhead pages were not returned" (Kliger et al., 2009, p. 608). Kliger et al. (2009) stated that this intervention, "removed the distraction of eight phone calls and three overhead pages per nurse in an hour" (p. 608).

Cost Analysis

To conduct a cost analysis, key components were identified as a Clinical Nurse Leader (CNL), resource nurse, and Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) reimbursement rates. First, a CNL is a crucial element to this project as they are the change agent using the nursing process to implement and sustain the change on the medical-surgical/trauma unit. The average hourly rate for a CNL is $37 dollars an hour, and working 40 hours a week totals a salary of $76,960 a year.

Next, in order to implement the change, the CNL lead a three-hour educational in-service with the unit clerk. During this time, a resource nurse was needed to cover for the unit clerk and resume all designated responsibilities. It is approximated that while the unit clerk is attending the in-service, the rate of resource nurse would be $39 dollars an hour, and including time and a half, results in $117 dollars for three hours.

Additionally, HCAHP reimbursement rates must be taken into consideration. HCAHP scores are based on patient satisfaction and patient experience while hospitalized. Thus, if interruptions can be reduced during medication pass times this will ultimately result in decreased medication errors. Decreased medication errors can in turn improve patient satisfaction and patient experience as well as increase HCAHP scores. According to Owens (2011), based on an institution's HCAHP scores they will either be rewarded or will lose one to two percent of their Medicare income. Therefore, while being a smaller portion of an institution's revenue, it is an incentive to improve HCAHP scores as it pays to perform well.

Methodology

Lippitt's Change Theory was used to address the objective of decreasing medication errors by reducing the amount of phone call interruptions during the medication administration

process (See Figure 3 for Project Timeline). Lippitt's Change Theory includes seven phases that

correlate with the nursing process. Lippitt's first three phases, which are comparable to the

assessment element of the nursing process include: diagnosing the problem, assessment of

motivation for change, and assessment of key stakeholders motivation and resources to

implement change (Mitchell, 2013, p. 33). Thus, the diagnosis on the general medical-

surgical/trauma unit was that there was no standardized medication administration process.

Therefore, key stakeholders including the nurse manager, charge nurse, registered nurses, and the

unit clerk of the unit were identified and evaluated to assess their motivation for change.

Conversations were carried out with each of the key stakeholders regarding how change is

implemented, and whether motivation for change was valued on the unit.

Lippitt's phase four and five correlate with the planning element of the nursing process,

and involves creating a change objective and defining the role of the change agent (Mitchell,

2013, p. 33). The objective for the project was to decrease medication errors by reducing the

number of interruptions during medication pass time. Therefore, the role of the change agent was

to conduct initial audits of the medication administration process (See Figure 1 for Results of

Initial Audits). This allowed for further assessment to be conducted in order to recognize current

problems at the microsystem level. It was found during the initial audits that the nurses faced a

numerous amount of interruptions while administering medications (See Appendix B for Initial

Audit Data Collection Template).

Next, the change agent conducted nurse surveys to further assess the medication

administration process (See Appendix C for Nurse Survey). The nurse surveys helped to gain

insight on how the nurses felt about the medication administration process. The surveys revealed

that the most common interruption the nurses' encountered was telephone calls during the

medication pass time. Additionally, the nurses stated they would appreciate if the unit clerk

triaged phone calls during this time in order to reduce the amount of phone call interruptions.

Therefore, based on support from the current literature, it was decided to focus on the unit clerk

regarding this small test of change.

Next, phase six of Lippitt's Change Theory correlates with the implementation element

of the nursing process, which involves maintaining change (Mitchell, 2013, p. 33). Thus, a

literature review was conducted in order to research the most successful way to decrease

medication errors by reducing phone call interruptions. Ching et al. (2013) created a triage tool

for the unit secretary to help differentiate between urgent and non-urgent phone calls. In

addition, a message template sheet was created for the unit secretary to take non-urgent messages

while the nurse was administering medications. Therefore, a unit clerk packet containing a unit

clerk screening algorithm, overhead medication pass script, message sheet, and nurse sign-up

sheet was created based on findings in the literature (See appendix D, E, F, G for packet

information). Pre-implementation data was collected on the number of pages and call lights,

whether the page or call light was urgent, and whether the registered nurse was paged or called

over the intercom system (See Appendix H for Pre- and Post- Implementation Data Collection

Sheet). Following, an educational in-service was conducted to educate the unit clerk on how to

use the algorithm, overhead medication pass script, message sheet, and nurse sign up sheet.

Additionally, the unit clerk screen algorithm was placed in a visible location at the nursing

station, as well as in the break room, to remind all employees of the goal to reduce interruptions

during medication pass times and ultimately decrease medication errors.

Finally, Lippitt's Change Theory concludes with phase seven, which is similar to the

evaluation element of the nursing process, and involves terminating the "helping relationship"

(Mitchell, 2013, p. 33). Consequently, in order to sustain the change and terminate the change agent relationship evaluation of the implementation was conducted. Therefore, post-implementation data was collected to evaluate for a decrease in phone call interruptions (See Figure 2 for Pre- and Post- Implementation Data). With this data and recommendations supported from the literature, a project overview was presented to the nursing administration of the urban hospital in Northern California.

Expected Results

With the implementation of the unit clerk packet and educational in-service, it is expected that the unit clerk will be able to successfully use the screening algorithm and triage phone calls and call lights in order to reduce the amount of nurse interruptions during medication pass times. It is also expected that the implementation of the overhead script will help remind all interdisciplinary healthcare team members to refrain from interrupting the nurse during medication pass times unless it is an urgent issue. Thus, it is anticipated that the number of phone call interruptions will decrease by 30% within two days of the implementation of the unit clerk packet and educational in-service.

Nursing Relevance

This project contributed to the understanding that efforts can be taken to reduce avoidable interruptions during the medication administration process. It is evident through the literature that medication errors are still of precedence, therefore it is important for nurses and other interdisciplinary team members to collectively do their part to reduce nurse interruptions that may contribute to medication errors. Therefore, by reducing avoidable interruptions during

medication pass times, nurses can provide high quality safe patient care when administering medications.

It is evident that the general medical-surgical/trauma unit at the urban hospital in Northern California is committed to proving high quality patient-centered care founded upon safety and best practice. As a result, by implementing the unit clerk packet and an educational in-service for the unit clerk, the institution can continue to carry out their mission and deliver quality patient care.

<div align="center">**Summary Report**</div>

Project Overview

This project was conducted on a general medical-surgical/trauma unit at an urban hospital in Northern California.   The medical-surgical/trauma unit provides care for patients with the diagnosis of: trauma, general surgery, medicine, urology, oral surgery, ear nose and throat, burns, neurosurgery, and neurology services. The most common patient diagnoses of the unit include: gunshot wounds, stab wounds, fractures, motor vehicle accidents, necrotizing fasciitis, trauma lacerations and wounds, and trauma brain injuries. The average length of stay on this unit is three to four days for medical diagnoses, and two to three days for surgical diagnoses. The professionals on the unit include registered nurses, personal care assistants, a nurse manager, physicians, residents, nurse practitioners, student nurses, occupational therapists, physical therapists, respiratory therapists, and a wound care specialist.

The project began with a needs assessment and microsystem assessment to assess the unit and identify problems within the microsystem.   It was revealed that there was no standardized medication administration process on the medical-surgical/trauma unit. Therefore, initial audits

were completed to observe the medication administration process on the medical-surgical/trauma

unit. The initial medication administration audits demonstrated that interruptions were

significant during medication pass time. Thus, nurse surveys were conducted to further assess the

opinion and perspective of the nurses working on the unit, and what they felt were the significant

interruptions they faced while administering medications. The survey also aimed to obtain

suggestions from the nurses regarding how to reduce interruptions during medication pass times.

Based on the nurse surveys and secondary audits of the medication administration process, it was

found that phone calls were the most common interruption during medication pass time.

Therefore, the aim of the project was focused on reducing interruptions, specifically phone calls,

by educating the unit clerk on triaging incoming phone calls and call lights.

Thus, in order to reduce the amount of phone call interruptions, a unit clerk packet was

created with a unit clerk screening algorithm, overhead script, message sheet, and nurse sign-up

sheet. In addition, pre-implementation and post-implementation data was collected on the

number of pages and call lights, whether the page or call light was urgent, and whether the

registered nurse was paged or called over the intercom system. The results demonstrated a slight

decrease in the amount of phone call interruptions.

Implementation

A packet was created that contained the unit clerk screening algorithm, overhead

medication pass script, message sheet, and nurse sign-up sheet. The unit clerk screening

algorithm provided the unit clerk with a tool to triage urgent and non-urgent phone calls and call

lights. Subsequently, the overhead medication pass script was used to announce to all employees

on the unit that medication pass was beginning and to please refrain from interrupting the nurses

unless an urgent issue was present. The script was also used at the end of the medication pass to

notify all employees on the unit that the general medication pass time was complete. Next, the

message sheet provided to the unit clerk allowed the clerk to take non-urgent messages while the

nurse was administering medications. The non-urgent messages were provided to the nurse upon

completion of the medication administration process. Lastly, the nurse sign-up sheet was

provided for the unit clerk to write down if a nurse was passing medications, thus if a phone call

or call light was directed for that nurse, the unit clerk could triage the call if it was a non-urgent

issue.

The unit clerk packets were provided to the key stakeholders: the nurse manager, charge

nurse, and unit clerk on the medical-surgical/trauma unit. Following, an in-service was

performed to educate the unit clerk about the packet, how to use the screening algorithm to triage

incoming phone calls and call lights, when to announce the overhead medication pass script, and

how to use the message and nurse sign-up sheet.

Results

For the initial audits of the medication administration process 20 nurses were audited

during the morning shift, and during those 20 audits, 24 interruptions occurred. 12 nurses were

audited during the night shift, and during those 12 audits, 9 interruptions occurred. Collectively,

33 interruptions were observed during 32 medication administration audits.

In addition to the initial audits of the medication administration process, 30 nurse surveys

were completed (See Figure 2 for Results of the Nurse Surveys). The results of the surveys

revealed that during the medication administration process, 30% of the nurses reported they were

always interrupted (90-100%), 57% reported they were usually interrupted (45-89%), and 30%

said they were sometimes interrupted (1-44%). In addition, the surveys illustrated that 100% of

the nurses said phone calls were a barrier they faced while administering medications. Furthermore, 40% of the nurses wrote that educating the unit clerk on how to triage phone calls during medication pass times could be a possible solution or strategy to prevent interruptions.

Next, the pre-implementation data of the unit clerk packet and educational in-service revealed out of 188 phone calls and call lights, 87% were non-urgent calls, while 13% were urgent calls. Then out of the 188 incoming phone calls and call lights, the nurse was paged 78% of the time. Post-implementation data revealed that out of 126 phone calls and call lights, 79% were non-urgent calls and 21% were urgent calls, and the nurse was paged 46% of the time. This showed a 32% decrease in the amount of phone call and call light interruptions during the medication administration process.

Recommendations

This small test of change has proven that with education to the unit clerk the amount of phone call interruptions can be reduced. However, this is just one aspect of reducing interruptions during the medication administration process. It is evident in the literature that to reduce interruptions during medication administration it is most successful with a multifaceted intervention (Craig et al., 2014, p. 259). To reduce interruptions during medication administration it is most successful with a multifaceted intervention

Further recommendations include, an in-service for all staff members about the importance of not interrupting nurses during medication pass times (Craig et al., 2014, p. 257). In addition, a visual element to alert colleagues the nurse is administering medications is a recommendation supported by the literature. For example, Craig et al. (2014) suggested nurses wear a white vest with the following written in red on the back, "Please do not interrupt while

passing medications," and similarly Freeman et al. (2013) recommended nurses wear a lighted lanyard during medication administration to indicate they should not be interrupted. Also, creating a 'No Interruption Zone' by posting signs on the unit and in the medication room to remind nurses and interdisciplinary team members to refrain from interrupting nursing colleagues during medication pass times (Freeman et al., 2013, p.180). Lastly, providing an in-service specifically for nurses to remind them they have a voice and that they can serve as a self-advocate is a recommendation that could reduce the amount of interruptions the nurse experiences while administering medications.

Evaluation & Conclusion

While this project was a small test of change that demonstrated a decrease in the amount of phone call interruptions by educating the unit clerk on how to triage phone calls and call lights, it was evident that a change agent is imperative on the medical-surgical/trauma unit to sustain the change. Further evaluations need to be conducted in order to observe the progress of the implementation as additional changes or implementations may be necessary.

Overall, with the implementation of the unit clerk packet and education of the unit clerk on how to triage phone calls and call lights, it can be concluded that this strategy can decrease interruptions during the medication administration process. However, further studies should be conducted, and recommendations from the literature should be taken into consideration. Medication errors continue to be a problem in U.S. hospitals, therefore further research is necessary to investigate how to decrease errors and improve patient safety.

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Appendix A

Root Cause Analysis

INDIVIDUAL (STAFF) FACTORS:
- Not all RNs took COW into the medication room, or used the supplied computer in the medication room to look up and verify medications.
- RNs wrote down medications on a piece of paper and took it into the medication room as a way to verify medications.

EQUIPMENT & SUPPLIES:
- Medication scanners broken/malfunctioned
- Computer system malfunction
- Patient ID band did not scan
- No water at bedside
- No available IV bags or tubing in medication room
- Not all medications have a barcode
- Interpreter phone not available

CULTURE:
- RNs conversing in the medication room about non health related topics
- RNs on cell phone in medication room
- RNs did not follow standardized process of the medication administration process

Medication Errors

ORGANIZATIONAL STRUCTURE:
- RNs had to wait in line to access the medication room
- RNs had to wait to administer medication(s) because the pt was being seen by a physician or PT
- Staff (Physicians, PT, unit clerk) interrupted during medication pass time with questions or phone calls
- RNs needed to tend to other urgent matters
- No available RN to double check medications (ie: Heparin)

TEAM FACTORS:
- Pharmacy did not provided necessary medications in Omnicell, refrigerator, or cassette by medication pass time
- Team rounds took place during medication pass time

Appendix B

Initial Audit Data Collection Template

DATE/TIME: UNIT:

AM/PM SHIFT: MED PASS: _____OF_____   TOTAL # OF PTS:

COMPLETED? Y/N/NA	TASK	# OF INTERRUPTIONS	TOTAL TIME OF INTERRUPTIONS	COMMENTS
	Verify relevant information (i.e. pain scores, vital signs and other needed clinical information) prior to entering medication room			
	Enter the medication room and sanitize/wash hands			
	Select all medication(s) in Omincell, verify against MAK			
	Remove medications from Omnicell, verify using the "five rights" (right patient, medication, dose, route and time)			
	Waste partial medication doses before leaving the med. room and cosign if necessary (i.e. narcotic waste, high-risk medications)			
	Label any medication that is not administered in its original container/syringe			
	Enter patient's room and sanitize/wash hands			
	Verbally confirm patient's name, DOB and any medication allergies against the MAK			
	Remind the patient: "for your safety, we will be asking for this information every time we give you any medications."			
	Scan patient's barcoded ID AND medication(s) to confirm the "five rights" (right patient, medication, dose, route and time)			
	Open and administer medications in front of the patient			
	Educate the patient: Include medication name, indications, and side effects.			
	Remind Patient: It is important to SFGH that you always know and understand the medications you are taking and their side effects. Use teach-back to confirm understanding. Once the patient has received the medication and education several times, the patient should be able to provide the medication information independently.			
	Ensure patient ingests the medications in your presence			
	Enter additional relevant information and then click "Chart" in LCR			
	Perform hand hygiene when you exit the patient's room			

Appendix C

Nurse Survey

Medication Administration

NURSE Questionnaire (*please add any comments on the back of this page*):

1. How often are you interrupted during each medication administration?

Interruption = stopped, faced with a barrier
Always(90-100%)   Usually (45-89%)   Sometimes (1-44%)   Never (0%)

2. What are the barriers or interruptions you face while administering medications?

- ☐ Another nurse needs assistance
- ☐ Phone calls
- ☐ Waiting in line for med room
- ☐ Waiting for doctor/pharmacy
- ☐ Other patient needs attention
- ☐ Equipment not working/cannot be found
- ☐ There are no interruptions
- ☐ Other: _____

3. What do you do when you encounter an interruption or barrier during medication administration?

- ☐ Scanner doesn't work: _____
- ☐ Patient doesn't have a wristband:

  _____
- ☐ Medication isn't available:_____
- ☐ Other:

  _____

4. Where do interruptions occur the most?

- ☐ Medication room
- ☐ Hallway
- ☐ Patient's room

5. What would prevent interruptions or barriers during your medication administration?

- ☐ Additional equipment

□ Improved equipment
□ Provide support for nurse-led patient education and teach-back (EX: written, audio, visual aids)
□ Better or more direct communication with Pharmacy/PCP
□ No improvements are needed for the medication administration process
□ Improved staff culture regarding med pass (coworkers choosing to respectfully not interrupt you during med pass)
□ Other: _____

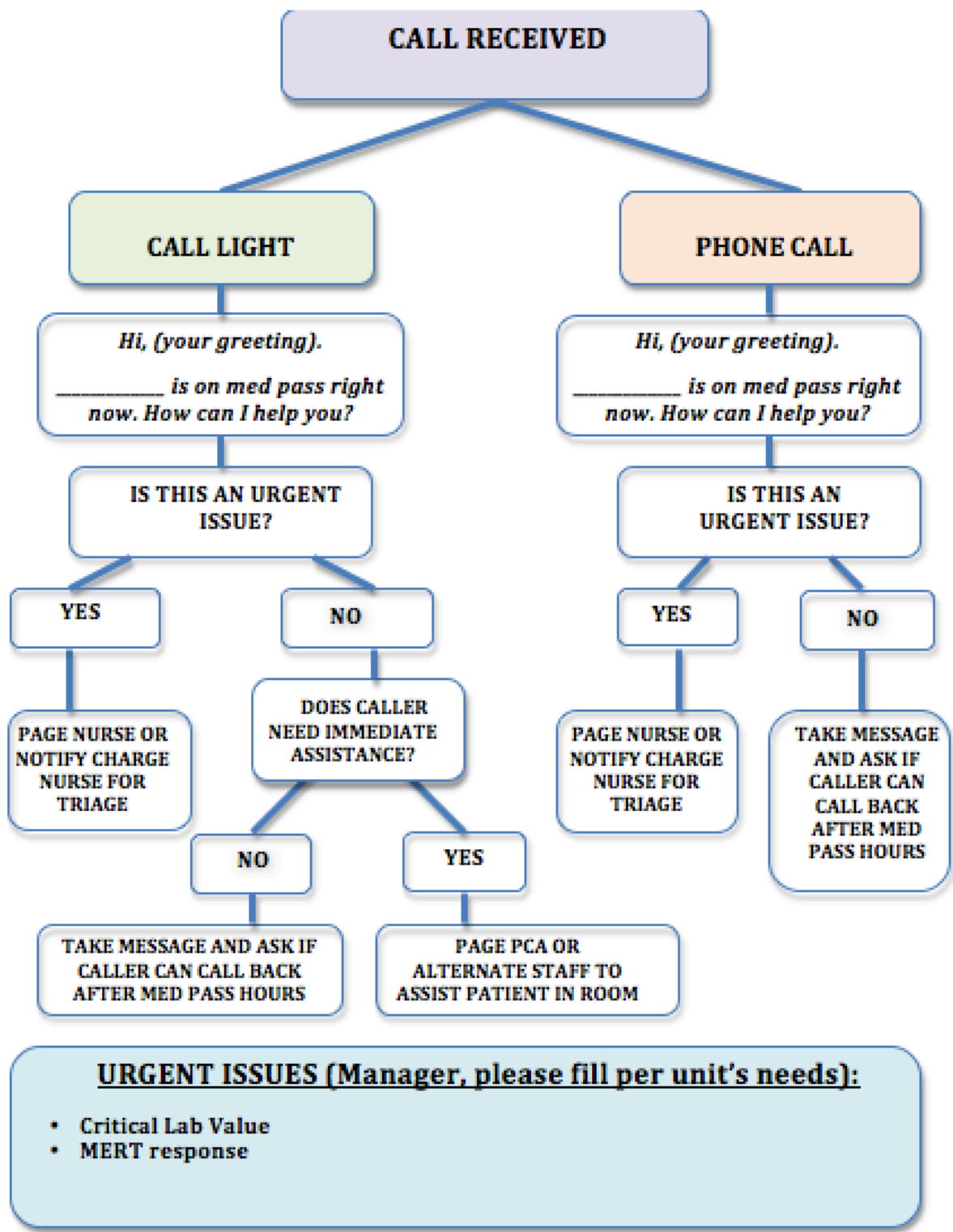6. Which part of the medication administration process is most time-consuming? What are some ways to improve those time consumptions?

7. What are some strategies or solutions to encourage no talking or interruptions in the med room?

8. What are some strategies or solutions to prevent *any* interruptions during the med pass (from the time you decide to give meds to walking into the patient's room to deliver them)?

Appendix D

Unit Clerk Screening Algorithm

CALL RECEIVED

CALL LIGHT

Hi, (your greeting).

_____ *is on med pass right now. How can I help you?*

IS THIS AN URGENT ISSUE?

YES

NO

PAGE NURSE OR NOTIFY CHARGE NURSE FOR TRIAGE

DOES CALLER NEED IMMEDIATE ASSISTANCE?

NO

YES

TAKE MESSAGE AND ASK IF CALLER CAN CALL BACK AFTER MED PASS HOURS

PAGE PCA OR ALTERNATE STAFF TO ASSIST PATIENT IN ROOM

PHONE CALL

Hi, (your greeting).

_____ *is on med pass right now. How can I help you?*

IS THIS AN URGENT ISSUE?

YES

NO

PAGE NURSE OR NOTIFY CHARGE NURSE FOR TRIAGE

TAKE MESSAGE AND ASK IF CALLER CAN CALL BACK AFTER MED PASS HOURS

URGENT ISSUES (Manager, please fill per unit's needs):

- **Critical Lab Value**
- **MERT response**

Appendix E

Overhead Medication Pass Script

Overhead Medication Pass Script

Beginning of medication administration - time: _____
> "Attention [UNIT]. Medication administration has now begun. Please refrain from interrupting nurses at this time. Med pass time will end at _____. Thank you."

End of medication administration - time: _____
"Attention [UNIT]. Medication administration has now ended. Thank you."

Appendix F

Message Sheet

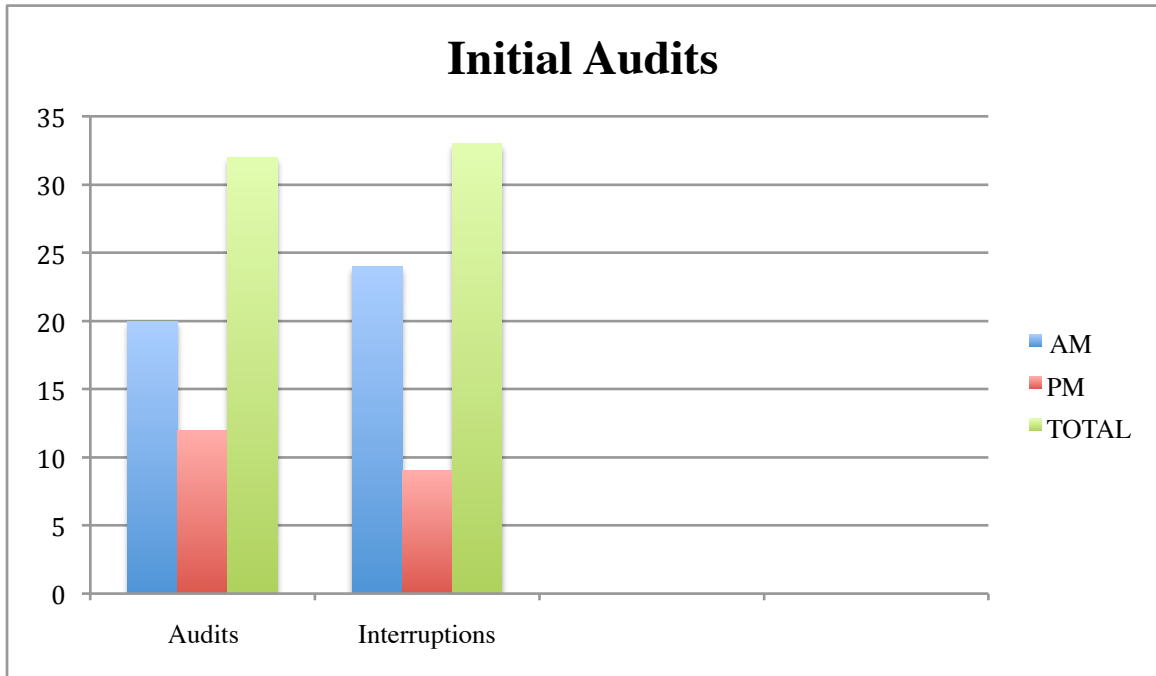# **MESSAGES**

UNIT:_____

DATE: _____

NURSE	CALLER & CONTACT INFO	MESSAGE	TIME

Appendix G

Nurse Sign-Up Sheet

Date:

Please write name and check appropriate box when on and off med pass.

Nurse Name	**ON** Med Pass	**OFF** Med Pass

Appendix H

Pre- and Post- Implementation Data Collection Sheet

Date:					
Clerk:					
Page	Call light	Reason for page/call	Nurse necessary?	Was RN called/paged overhead	Total # of pages & call lights

Figure 1. Initial Audit. This figure illustrates the results of the initial medication administration audits conducted on the general medical-surgical/trauma unit.
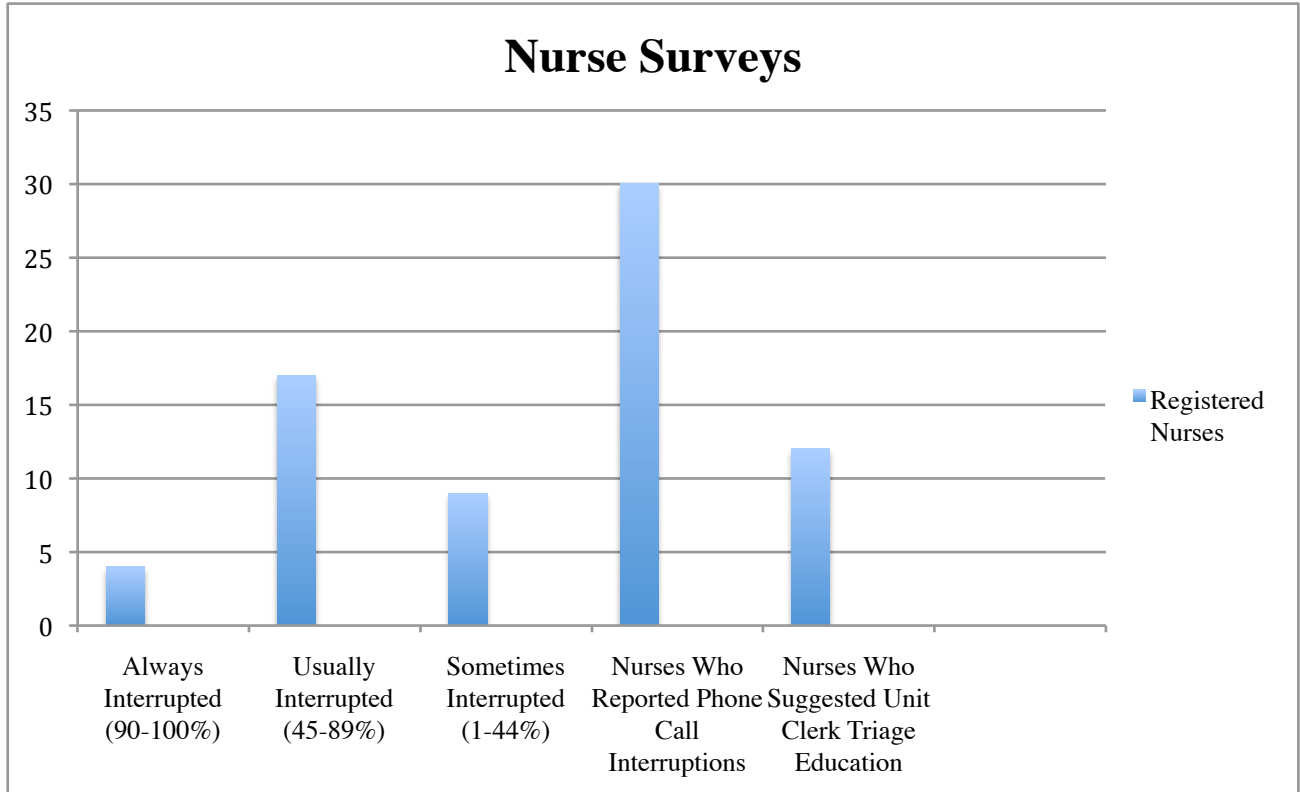
Figure 2. Nurse Surveys. This figure illustrates the findings from the nurse surveys (n=30) on the general medical-surgical/trauma unit.
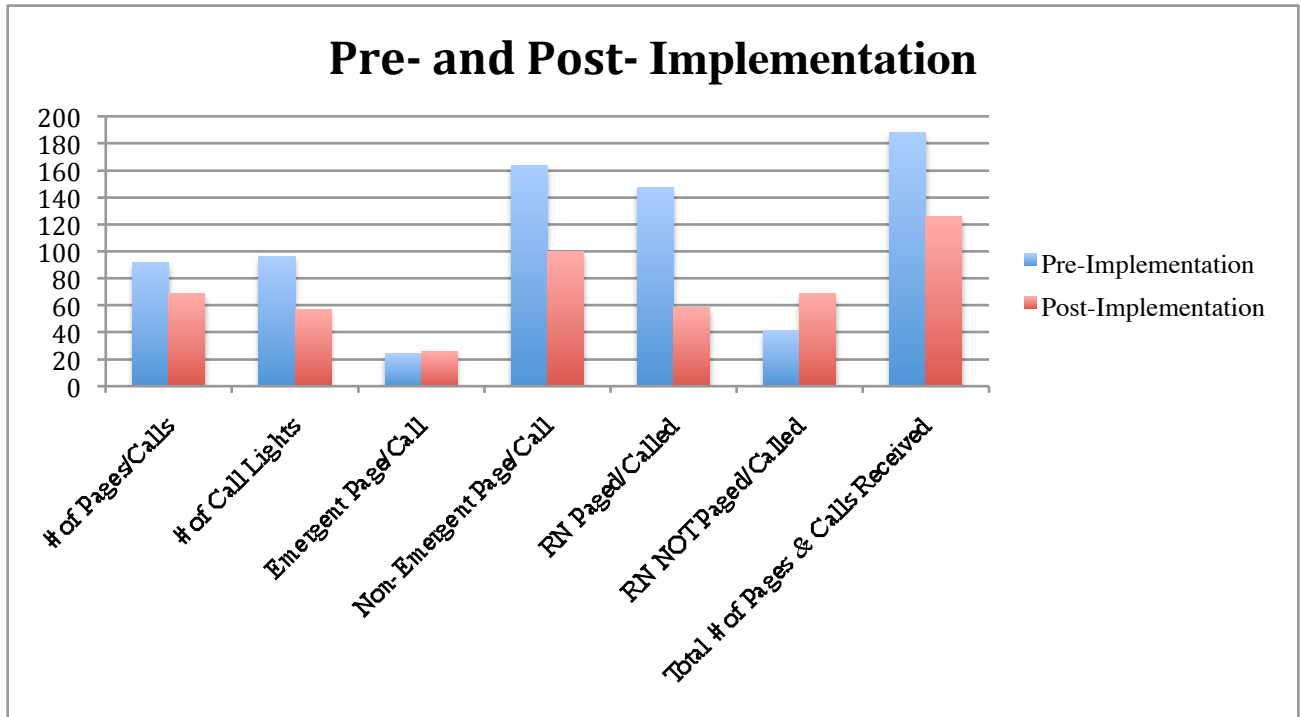
Figure 3. Pre- and Post- Implementation. This figure illustrates the pre- and post-
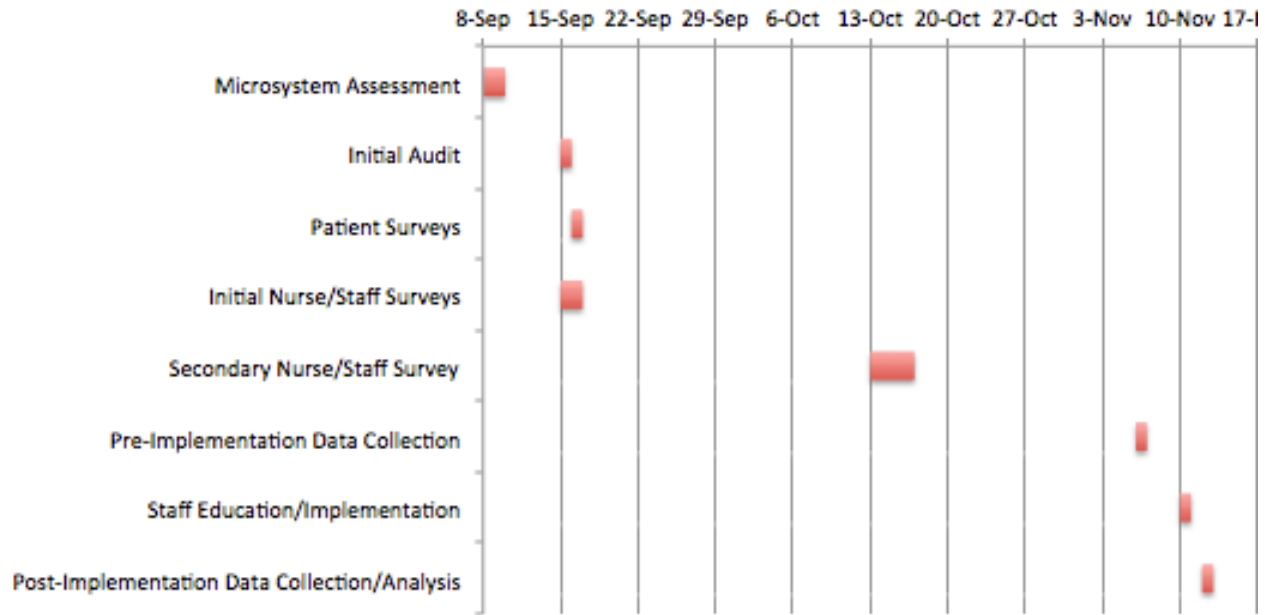implementation results.

Figure 4. Project Timeline. This figure is a Gantt chart that reflects the timeline of this project.