Reducing Medication Errors on an Inpatient Eating Disorder Unit

Creighton University

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Objectives

1. State priority actions facilitating safe medication administration.
2. Identify the benefits of a No Interruption Zone (NIZ) to reduce medication errors.
3. Explore the role of interprofessional collaboration and leadership engagement in the development of systems leading to safe medication administration.

- No Conflict of Interest or Financial Disclosures to Report

Introduction

A comprehensive evidence-based system approach to reduce medication errors on an inpatient eating disorder unit.

Background

- On average, five percent of patients hospitalized have ME, making them one of the most common types of inpatient errors (10).
- Psychiatric inpatients are at high-risk for Medication Errors (ME) (8).
- ME are multi-factorial, research shows in psychiatric setting are due to complex treatment schedules, frequent interruptions and distractions, linked to higher ME (1,8,9).
- Patients with eating disorders are treated with additional medications adjunct with nutrition and psychotherapeutic treatments that place them at an even greater risk for ME (3).

Why is this important?

- The prevention of ME has been a priority for the Joint Commission and a national patient safety goal because the risk is so high (7).
- Emerging evidence shows that one key factor to reducing ME is by decreasing or eliminating distractions and interruptions (4,8,13).
- The Institute of Medicine has made the connection between interruptions, medication administration and patient safety and made recommendations on NIZ (6).

Problem

- Leadership identified ME with barcode scanning to be a concern on the Eating Disorder Unit (EDU).

- The structure of the EDU has no protected or set time for nursing to give medications.

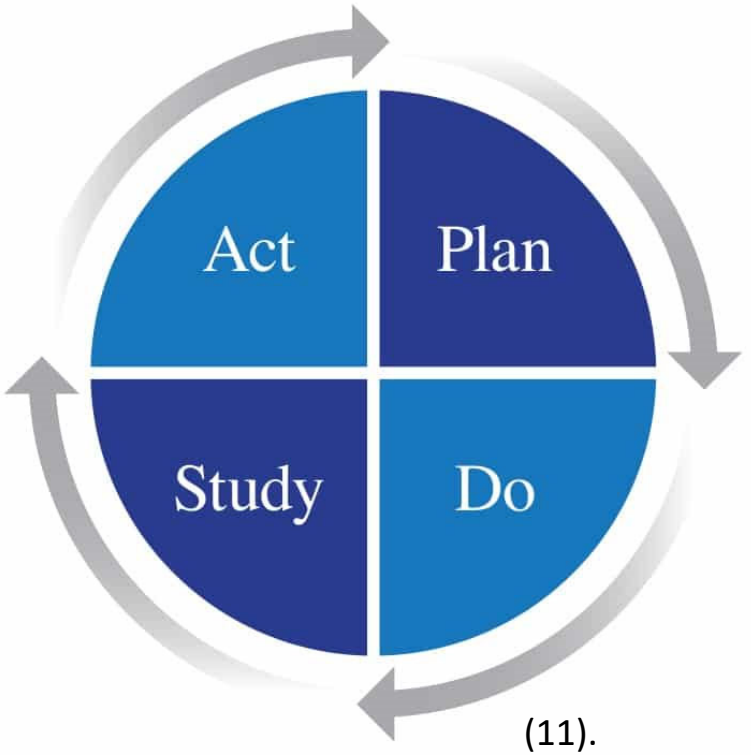
- Data for July showed 23.73% of medications were given outside of scheduled time and three medication safety events were related to missed barcode scanning.


Review of the Literature

What the research tells us

- ME in mental health hospitals are common and do cause harm (1,8,9).
- Higher rates of workarounds and not using barcode scanning that includes wrong administration of medications, (9,12).
- Studies have found mental health hospital ME were due to distractions and interruptions in their incident reports (8).
- Research links connection to latent failures with lack of protected time for medication administration(8).
- The Institute of Medicine has supported the concept of the Sterile cockpit principle and the use of distraction free zones is an appropriate method to reduce distractions and ME (5)(6).

Theoretical/Conceptual Framework



(11).

Purpose

- Implement a comprehensive approach resulting in a culture change, promote safety and reduction in medication errors.
- Engagement of interprofessional team to explore systems and policies that would facilitate this change.
- Education focusing six rights of medication administration, barcode scanning and NIZ

Setting

- 8 bed inpatient EDU in an upper Midwest hospital.
- All patients receiving medications by barcode scanning through EHR.

Ethical Considerations

- The confidentiality of staff surveys was anonymous and voluntary.
- All data collection from EHR excluded patient or staff identifiers.
- The pilot project could be put on temporary hold in the event of an emergency.
- This quality improvement project was submitted to both Creighton's Internal Review Board (IRB) and project organization site IRB.

Objectives

1. Implementation of project to reduce medication errors on the EDU, barcode scanning will be used 100% of the time beginning with the implementation of the revised program schedule.

2. Medications will be administered per established policy timeframes as measured by EHR data collection for the month of November to show a 90% error reduction.

3. Clarification of the current policy related to timed medication administrations for the EDU will be revised post interdisciplinary team meeting to reduce medication errors by 90%.

4. Interruptions during medication administration will be avoided using NIZ 100% of the time as measured through the interruption medication administration checklist when comparing November data to December data.

5. Reduce barcode scanning errors by 100% compared to prior implementation and post implementation by one month.

Methods

1. July data served as the baseline variable for the project.
2. Recruited staff in voluntary paper survey to identify what current procedures and barriers occur on EDU.
3. Scheduled a meeting with pharmacy and providers on administration policy and orders.
4. Completed an educational in-service training.

5. Meeting with key stakeholders for a temporary AM schedule change using TeamSTEPPS approach

6. NIZ stop sign implemented from November 2022-December 2022.

7. Implemented the interruption medication administration checklist for November.

8. Collected EHR data for Barcode scanning and scheduled time errors and safety event reports for November and December 2022.

Nurse Medication Administration Experience Survey

Appendix A

Nurse Medication Administration Experience Survey

Thank you for taking the time to take this survey on your experience with Medication Administration on the Inpatient EDU. Attached is the current Policy for reference.

1. What barriers do you face with Medication administration based on the current Medication Administration Policy at Sanford?

2. What barriers do you experience with medication administration using Barcode scanning?

3. What are factors that support safe medication administration on the psychiatric-inpatient eating disorder unit.?

4. What recommendations do you have to improve medication administration on the unit?

5. What typically is the reason for the interruption during medication administration?

6. Do you believe that the current unit program schedule leads to medication errors

Yes No

If yes please explain

Medication Administration Interruption Log Collection Tool

Post implementation of Sterile Cockpit No Interruption Zone (NIZ) monitoring document for interruptions during medication administration. Please make a (x) in each patient box that an interruption occurs during medication administration and the

Day Shift Medication Pass Interruptions total number per patient	Patient Emergency	Interrupted for Group Therapy or Individual Therapy	Interrupted for patient Team Meeting	Interrupted for a phone call	Interrupted by Staff/Patient from the unit outside of the NIZ.	Other –Any other reasons an interruption occurred.
401						
402						
403						
404						
405						
406						
407						
408						

Night Shift Medication Pass Interruptions total number per patient	Patient Emergency	Interrupted for Group Therapy or Individual Therapy	Interrupted for a Patient Team Meeting	Interrupted for a phone call	Interrupted by Staff/Patient from the unit outside of the NIZ.
401					
402					
403					
404					
405					
406					
407					
408					

Nursing Staff Education

Nursing Staff Education to Help Reduce Medication Errors:

Why is this important?

- Emerging evidence shows that one key factor to reducing medication errors is by decreasing or eliminating distractions and interruptions during the medication administration process (Federwish et al., 2014; Keers et al., 2018; Westbrook et al., 2017). The Institute of Medicine has made the connection between interruptions during medication administration and patient safety and made recommendations on do not disturb visual aids for nurses during medication administration (Institute of Medicine,2004).

Eating Disorder Unit Medication Error Data

- Data from July from the EDU unit showed 40 medications out of 3,633 with a 98.90% medication scanning rate, and a 97.91% patient armband scanning rate.
- In the month of July,757 medications out of 3,189 were given outside of the scheduled time window, showing 23.73% of the medications were given outside of the 30 or 60 minute ordered time window.

Sanford Policy Education:

Medication Scheduling (exception Ambulatory): · Medication scheduled for the change of shift (ex. 0730, 1530, and 1930) are to be given by the off going nurse. · Time scheduled medications (single doses or those on every 4 hours, every 6 hours frequencies for example) will be considered as given at the correct time if administered within 30 minutes before or 30 minutes after scheduled time. For medications ordered on a Daily, two times a day, three times a day, or bedtime frequency for example, they will be considered as given at the correct time if administered within 60 minutes before or 60 minutes after the scheduled time.

- *Please note that on the Eating Disorder Unit. A order that states Three times a day before meals will be considered as given at the correct time if administered within 30 minutes before or 30 minutes after scheduled time.*

Medication Administration:· Prior to administration of medications, two patient identifiers will be used to verify correct patient. The preferred method of verifying patient identification is patient's full name and date of birth verbally verified with patient/representative. Allergies will also be verified. Patient Identification and Wrist Band Identification- Enterprise **·Prior to administering all medications the 6 Rights of medication administration are to be verified:** · *The right medication · The right dose · The right client · The right route · The right time · The right documentation · Patient Safety equipment will be used when available: · Bar code scanning of patient and medications prior to administration*

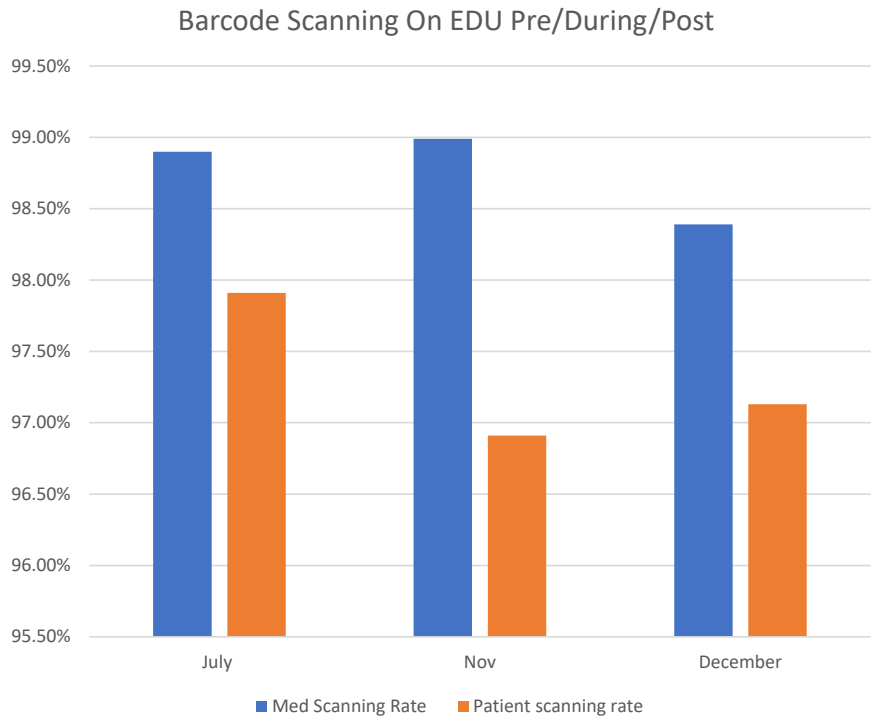
Medication Safety Events:· Any medication error must be reported upon discovery at once to the Charge nurse or the clinical supervisor/director and those with prescribing privileges. An event report is also completed.

Observation Log Data Collection Tool

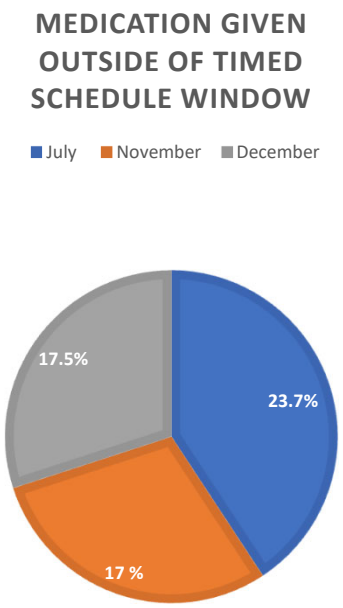
Missed barcode scanning	Missed timed medication administration	Safety events related to Medication Administrations
Please list if override reason was listed (barcode is unreadable, barcode scanner broken, downtime, Emergency, No barcode scanner available, no patient armband)	Please list if alert noted for late administration has a comment for reason. (Patient off unit, medication missing from pharmacy, Patient refused, patient in group).	Please list if: 1. Wrong Medication 2. Wrong Dose 3. Wrong Client 4. Wrong Route 5. Wrong Time 6. Wrong Documentation
July Medication barcode scanning missed 40 November Patient barcode scanning missed 119 Medication barcode scanning missed 39 • Barcode is unreadable 102 • Barcode scanner broken 1 • No patient armband 16 December Medication Missed Barcode scanning 41 Patient barcode scanning missed • Barcode is unreadable 38 • Barcode scanner broken 17 • No barcode scanner available, 1 • No patient armband 8	July 757 medications given outside of scheduled window November • 656 Medication given outside of schedule window • 406 with orders to be given 30 min prior or after order time. • 250 with orders to be given 60 min prior or after order time. December • 444 Medications given outside of schedule window • 357 with orders to be given 30 min prior or after order time. • 87 with orders to be given 60 min prior or after order time. Refused – omitted from data Held- omitted from data	July 1. Wrong dose. Medication given prior to being scanned. 1. Wrong dose Medication given prior to being scanned 1. Wrong route November – None December -None

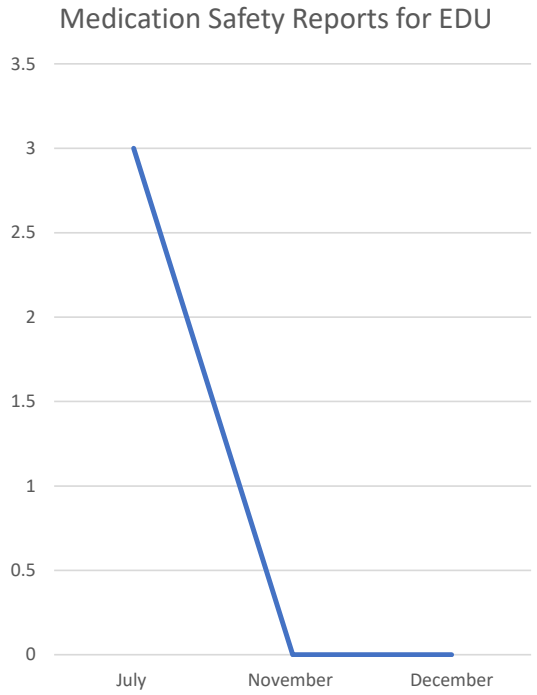
Results

- Interprofessional collaboration was a key. Medication Errors were reduced by 100% for no safety events.
- A reduction was noted in medications given outside scheduled time window with a reduced error rate of 6.70% for November and 6.2% for December
- Survey results from staff noted they felt more respected as an equal part of the interprofessional team.



Results





- Having a NIZ alone is not enough to reduce medication errors at 100%.
- The project follows current research that its an appropriate method but factors such as protected medication administration time need to be a focus for future studies (8) and that a culture change must co-occur for best, sustainable results (5).

Evaluation Plan

- PDSA cycle sets a foundation for ongoing performance improvement.
- The next plan for this project is to establish a permanent protected time for medication administration in the EDU schedule.
- This project is sustainable, can be implemented in any health care setting, supported by upper management.
- The project will be disseminated at the Organizations Nursing Symposium & Creighton Nursing Scholarship Day.

Strengths

- Self-reported survey data and data collection from EHR was economical, confidential and an efficient way to collect data.
- Safety driven and low cost
- Engagement of an interprofessional team
- Integrated direct feedback from nursing staff

Limitations

- Low number of unit staff
- Short time frame of pilot project implementation
- Self-reported survey data has potential for missing data.
- EDU experienced nursing staffing challenges during implementation of the project

DNP Implications

Thank you.

- Acknowledgment to Dr. Sara Banzhaf DNP, APRN-BC *Assistant Professor, PMHNP Track Leader of* Creighton University
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- Organizations Education & Research Committee
- Organizations Eating Disorder Unit and Upper Management

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Questions?

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