Decreasing Medication Errors in the Perioperative Area

Julie Boytim MSN, CRNA

UTHealth
The University of Texas Health Science Center at Houston
School of Nursing

Background

- Medical errors are the 3rd leading cause of death in the US.
- Medication errors (MEs) are a type of medical error.
- Perioperative MEs occur as often as 1 out of every 20 administrations.
- One-third of MEs cause patient harm increasing morbidity & mortality.
- The complex and fragmented design of the perioperative area increases risk.
- Half of perioperative MEs occur in the administration process.
- Errors may include: syringe swaps, substitution, wrong dose, omission, duplication, wrong patient

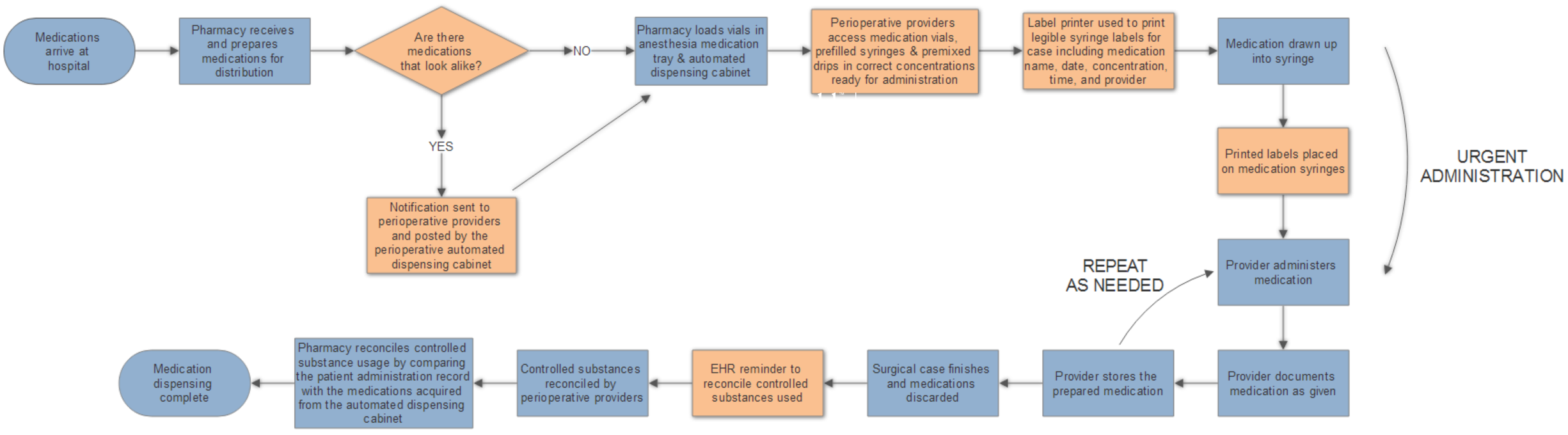
Definition

A medication error is any error in the medication process.

Aim

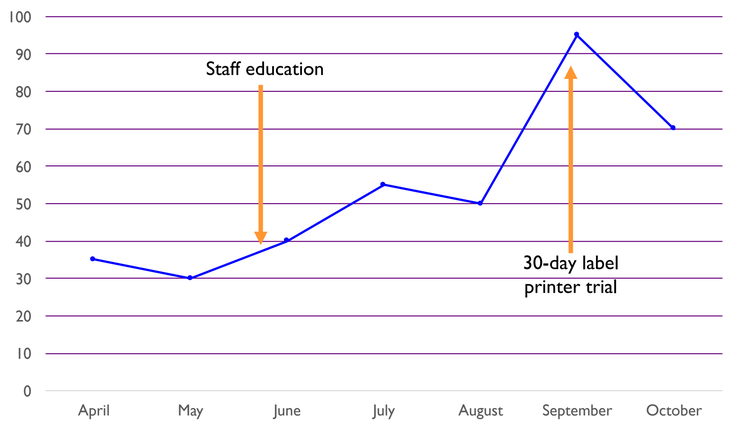
To decrease perioperative medication errors by improving medication practices through five interventions over three months.

Process Map



PDSA Cycle 1 Results

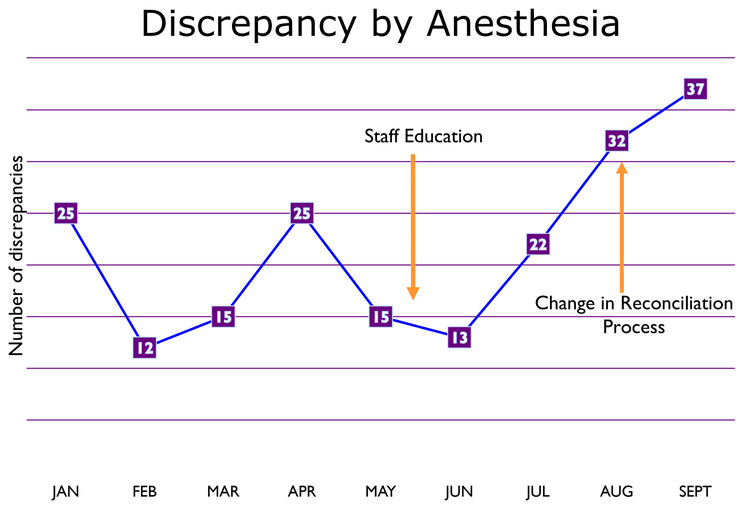
Syringe Labeling Compliance (%)



Pre- and post-intervention using syringe label printer

Staff Knowledge Assessment Scores (%)

Controlled Substance Waste Discrepancy by Anesthesia



Pre- and post-intervention to reorganize medication tray

Actions

1. Rearrange medication tray. Using the Institute for Safe Medication Practices (ISMP) recommendations for medication tray organization, the committee determined a new layout organizing medications by drug class and order of use. Anesthesia staff and pharmacy staff were given the opportunity to review the proposed tray arrangement and provide input before implementation.
2. Implement the trial of a label printer system. The project defines syringe labeling as the process of identifying the syringe contents with a clear label that includes medication name, concentration, expiration, and the provider who drew up the contents. The project introduced a labeling system that prints a sheet of labels for anesthesia to use for each case.
3. Implement EHR notification. The project committee determined an EHR reminder would assist providers in remembering to reconcile narcotics at the end of each encounter. The EHR notification provides perioperative healthcare providers a reminder on screen to reconcile narcotics each time a patient record is closed.
4. Develop perioperative communication tool. To alleviate duplicate dispensing of ketorolac and intravenous acetaminophen, the DNP student developed a notification sheet to be placed on the front of the patient chart. Eventually, the hope is to place the notification in the EHR too.
5. Emphasize hospital error reporting system. The reporting of errors is voluntary but encouraged through the assurance of a just culture. Staff is encouraged to enter errors into the system, which will help guide process improvement.

Sustainability

- Reorganized medication tray
- Perioperative staff recognizes importance of reporting medication errors
- Adopted labeling system
- Integrated education program into orientation
- Notification remains part of EHR
- Perioperative leadership committed to continuing to improve medication process

Stakeholders

- VP Quality Improvement-CHI St Joseph
- Anesthesia Staff
- Anesthesia Safety Committee
- Perioperative Director
- Pharmacy Director
- Perioperative Pharmacy Tech
- OR staff
- Perioperative Business Manager
- Perioperative Educator
- Preoperative Staff
- Recovery Room Staff
- Patients
- DNP Student

CHI St. Joseph Health

AMERICAN ANESTHESIOLOGY a MEDNAX Company

Limitations

Efforts were made to remove opportunities to revert to previous systems. Continued support and encouragement of the project is needed to emphasize improving the quality and safety of practice. Periodic progress was also reported. The label printer was also only available for a 30 day trial, limiting the time to see improvement, although the limitation did show the results of improvement with just education and then implementation of the system.

Future Impact

- Analyze and improve with each PDSA cycle
- Building block for future improvements
- Develop process for decreasing perioperative medication errors
- Model for assessing medication process
- Improve quality & safety of perioperative care