Safe Medication Administration for NICU Patients

Franklin Square Hospital Center

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Past Practice

- Pixus
- Unit of Use
- Stocked by pharmacy
- Nurses dispensed dose of medication for their patient. (0.5kg and 5kg)
- Override capabilities
Identified issues

- Pixus not stocked with medications needed
- Nurse dispensing the correct dose
- Profiles not in pixus and delays
- Mixing medications with vials in the bins
- Syringes to bedside without patient labels and dosing
- Levels of medications never consistent
Quality Improvement

- Literature searches for best practice
- Discussed with other hospitals their practices
- Visited other hospitals to see the practice in action and speak to pharmacy, physicians and staff.
  - Physician order issues
  - Pharmacy dispensing
  - Staff administration
- Benchmarked with our sister hospitals for best practice
Identification of problem

- Was this the safest way to administer medications to premature/sick newborns?
- What was the best practice?
- Where to begin?
Team

- Medicine
- Nursing –day and night
- Pharmacy
- Unit Secretaries
- Neonatal Nurse Practitioners
- Education Specialist
- Pharmacy Technicians
- Management
Writing orders

- Illegible order
  - Order needed to be written and legible or it would not be filled.
  - No abbreviations would be accepted
  - Order needs to stand alone
  - Print name or use hospital number for identification
Writing orders

- Incomplete Order
  - Date
  - Time
  - Weight
  - Medication
  - Dose
  - Route
  - Milligram/kg
  - Frequency
  - Times to be given
  - Indication
  - Signature/Number
  - No abbreviations
Writing orders

- Incorrect order
  - Checked when placed in Que in the pharmacy for dose and indication
  - High risk medications checked by 2 medical staff members
Writing orders

- No order – verbal orders or discussions in rounds without order written
  - In the past the nurse would override the pixus and administer the medication
  - No medication is given unless the order is written.
Writing orders

- Missing/Wrong Label
  - Name and DOB are checked with MAR, order and patient prior to administration and if the wrong label is on the order it is caught at that time.
  - Missing label will not be filled
Transcription

- Order Missed
  - Orders checked at the change of each shift
  - All orders taken to US
  - When placed at bedside order sheet flagged
Transcription

- Transcribed Incorrectly
  - Scan to pharmacy
  - Placed in computer
  - MAR printed in NICU
  - Electronic MAR is printed and checked by 2 RN staff at the change of each shift.
Transcription

- Scanner Down
  - Call from pharmacy
  - Walk to pharmacy
Transcription

- Not Scanned to Pharmacy
  - Orders checked for completion at change of shift.
Medication Policy

● Multiple nursing policies
  - ONE POLICY
    ● Writing an order
    ● Transcription
    ● Preparation and Dispensing
    ● Medication Cart Access and Use
    ● Administration
    ● Controlled substance inventory
    ● Continued Bolus of Narcotic
Medication Policy

- No Pharmacy Policy
  - Combined policy for Physician, Nursing and Pharmacy
Medication Policy

- Various Locations of Policies
  - On line for ease of access to everyone
  - Copy on top of the medication cart.
Dispensing

- Wrong medication name
  - Indication needed for every order
  - Checked in pharmacy once when placed in Que and then with two nurses as they check the MAR with the original order
Dispensing

- **Wrong amount or route**
  - concentration – standard concentration
  - Wrong syringe – check in pharmacy/NICU with label/MAR/order. Oral syringe amber with oral adaptor.
  - Checked with 2 RN staff for amount and route
Dispensing

- Incorrect label
- Wrong calculation
  - Checked in pharmacy by tech/pharmacist and in the NICU with 2 professional staff
  - Weight and milligrams per KG on every order
Dispensing

- Delivery Delays
  - Pick up/delivery delay – flag
Dispensing

- Illegible label
  - No medication is given if it is not legible.
Administration

- Medication from wrong bag
  - checking system
Administration

- Wrong time – Missed dose
  - MAR checked with times
  - Circle and document if not given on time
Administration

- **Wrong route**
  - oral/IV syringes
  - Connections with Oral gastric tube only to fit an oral syringe.
Administration

- Additional doses
  - 24 hour supply only
Administration

- **Wrong Dose**
  - With all checks in place this should never happen.
  - Our goal would be to have no medication administration errors.
STAT Medications

- All medications are unit dose
  - Respiratory medications.
  - Nebulizer treatments.
  - Aerosol treatments.
- Emergency stock – Morphine only
Cart System

- Individual bin
- Individual bags for medications/narcotics
- Checked every 12 hours
- Narcotic check every 12 hours and download cart every month
- Discrepancy
Staff Feelings on the FMEA Process

- Positive experience with all disciplines
- Realization of the number of ways things could go wrong.
- No blame environment as we brainstormed and as we track occurrences.
- Positive feeling that I helped make the system safer.
- The nurse is the last line of defense in giving medications.
Pre-FMEA (2005), 60 occurrences were reported between January – December.
   - Most occurrences were in the areas of dispensing and administration.

Post-FMEA (2006), 74 occurrences were reported between January – December.
   - The dispensing errors increased by 20%.
   - The administration errors decreased by 24%.

Types of Occurrences
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- Administration – 24% of all occurrences
  - Missed doses – 16%
  - Wrong times – 50%
  - IV fluids not changed 24 Hour – 5%
  - IL not turned off at 12 hours – 10%
  - Wrong dose to patient – 5%
  - Wrong patient – 0
  - Wrong medication – 0
  - Hepatitis B twice – 5% - Med reconciliation
  - Medication found at bedside – 5%
Types of Occurrences

- Dispensing – 59% of all occurrences
  - Wrong dose – 43%
  - Additional syringes – 5%
  - Delay of medication to cart – 36%
  - Wrong medication sent – 2%
  - Wrong form – 9%
  - MAR incorrect with order – 2%
  - Wrong IV fluid sent – 2%
Types of Occurrences

- Ordering – 13%
  - TPN issues – osmolarity – 10%
  - Incorrect order – 80%
  - Wrong patient – 10%
  - No signature – 10%