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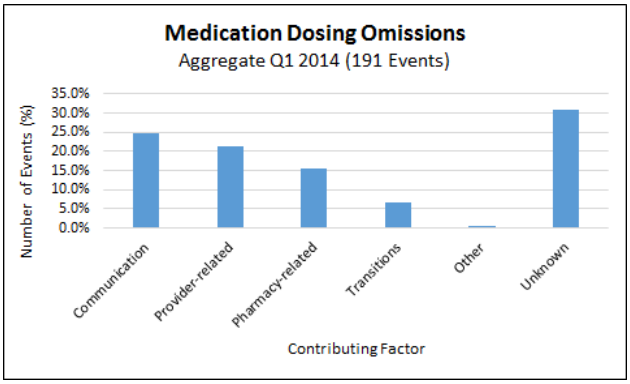
Clarity PSO Learning Series

Topic: Medication Dosing Omissions

What We Learned

Historically, dosing omissions have overall reigned supreme as the top type of dosing error in reported medication events. Event reporting from our clients presented Clarity PSO an opportunity to look deeper at event descriptions related to dosing omissions and why these events occur. We analyzed both aggregate and facility-specific data to better understand factors contributing to them.



From our analysis, we learned that communication continues to remain the top contributing factor related to patient errors, including medication dosing/omission events. Other commonly cited contributing factors included human factors, equipment and handoff. The majority of provider-related contributing factors related to provider judgments, which may or may not have been appropriate to the situation and equipment use. There were very few provider-related events involving improper storing of medications (medication drawer or at bedside), workflow or workarounds.

The following are themes and patterns that emerged from our analysis of contributing factors of events related to dosing omissions:

- **Communication-related:**
    - Administration of ordered medications and protocols:
        - Unclear or poor directions regarding appropriate administration of insulin and patient controlled anesthesia
        - Differing provider interpretations of physician orders

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        - Additional directions for medication administration not received or communicated to the provider because of the use of nurse communication orders or "other" text options separate from the medication order

- **Provider-related**:
    - Nursing judgment
    - Equipment Use:
        - IV piggybacks that were found either not infused or the medication vial unactivated into the bag
        - Appropriate programming did not occur for patient-controlled analgesia (PCA)
- **Pharmacy-related**:
    - Medication unavailability
    - Incomplete pharmacy ordering processes
- **Transition-related:**
    - Unit to unit – medications were not sent with patient causing delays
    - Unit to facility – dose not given by sending unit to receiving facility
    - Facility to home – patient discharged prior to receiving a recently ordered medication to be given prior to discharge
- **Unknown:**
    - No reason was provided as to why the dose was omitted
    - The omission was reported by a provider who discovered the event at a later time

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Recommendations

Dosing omissions is just one type of medication error. In order to ensure the safety of our patients, it is important that we implement strategies to prevent all types of medication errors. Based on our data analysis and experience, we suggest you consider the following resources and recommendations as you develop your medication error strategies:

- Review the contributing factors noted above and assess if similar situations exist in your organization; address those that are present
- Choose risk reduction strategies that do not rely on human memory such as forcing functions, fail safe solutions and constraints
- Ensure consistent communication processes for medications that are included in the order vs separate nurse communication orders
- Consider the use of forcing functions for IV pumps that require unclamping of secondary lines for IV piggybacks as reminders to unclamp; or solicit providers for innovative ideas to address omitted doses related to unclamping secondary lines
- Include medication protocols, such as insulin and those that use PCA/PCEAs, in annual competencies or PRN refreshers if needed - identify nurse champions for these protocols to serve as resources and to conduct surveillance
- Ensure policy/procedure and continuing education/competencies reflect best practice
    - If there are problem areas, highlight them more often with visual reminders, staff meetings, committee meetings, etc.
- Evaluate how your organization incorporates the 3 checks (interplay check of order, medication administration record and medication label) and the 6 rights during the medication process. Has bar coding replaced observation of the 6 rights?
- Routinely screen unit providers for suggestions on what system processes could be improved on or have the unit providers conduct a Failure Modes and Effects Analysis (FMEA) in conjunction with the Pharmacy and Equipment/Supplies Department – for example, what are the current processes for bulk refills/missing medications?
- Implement verification practices for confirmation of receipt of orders (ex. pharmacy, faxes, etc.)
- Review transition processes (i.e., unit to unit, unit to facility, unit to home) for opportunities to address medication omissions and delays because of communication issues prior to patient discharge

Resources:

- Institute for Safe Medication Practices (ISMP) worksheet to analyze medication errors
- ISMP's List of Error-Prone Abbreviations, Symbols, and Dose Designations
- American Society of Hospital Pharmacists, Inc. (ASHP) – Guidelines on Preventing Medication Errors in Hospitals
- The American College of Obstetricians and Gynecologists (ACOG) – Improving Medication Safety
- ISMP's Guidance on the Interdisciplinary Safe Use of Automated Dispensing Cabinets
- The Joint Commission's Sentinel Event Alert: Using Medication Reconciliation to Prevent Errors
    1) Develop a list of current medications;
    2) Develop a list of medications to be prescribed;
    3) Compare the medications on the two lists;

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4) Make clinical decisions based on the comparison;
5) Communicate the new list to appropriate caregivers and to the patient.

- Safe Practices Strategies identified by the Collaborative Alliance for Nursing Outcomes (CALNOC)
  1) Compare medication with the medication administration record (MAR) on removal from automated dispensing cabinet;
  2) Keep medication labeled from preparation to administration;
  3) Check two forms of patient identification;
  4) Explain medication to patient;
  5) Chart medication immediately after administration;
  6) Protect the process from distractions/interruptions.