

# *Improving the Pre-Empted Medication Error Reporting System at St. Charles Hospital, Port Jefferson, NY*



**Contributed by Kathleen LeDoux, MS, RN, BC, CPHQ  
Performance Improvement Nurse,  
St. Charles Hospital, Port Jefferson, NY**



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# About St. Charles Hospital

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- 239-bed community hospital in Port Jefferson, NY
- Medication error reporting process is interdisciplinary
- Nursing and pharmacy departments work actively together to promote patient safety as part of the hospital's Medication Safety and Usage Committee



# The Project Team

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- Gerard Smaldino, MS, RPh
- Kathleen LeDoux, MS, RN, BC, CPHQ



# The Problem

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- Beginning in 2004-2005, team members from medical staff, nursing, nursing education, pharmacy, quality, and risk management began to explore ways to recognize and improve the reporting of pre-empted errors.
- While traditional reporting via the formal occurrence reporting system was encouraged, other venues for recognition and reporting were considered.
- The team determined that certain categories in the clinical interventions performed by pharmacy and the MAR communications generated by nursing could appropriately be recognized as pre-empted medication errors.

# Project Goals

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- Provide a process to ensure the correctness of the MAR on a daily basis.
- Accurately capture clinical interventions performed by the pharmacy staff.
- Simplify the process to communicate MAR corrections from the nursing staff to the pharmacist.

# Root Cause Analysis

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Drill-down analysis helped determine that these two processes were means of identifying pre-empted medication errors that often went unrecognized and under-reported.

- **MAR Communications**

- Beginning in 2004, St. Charles Hospital implemented the facility-wide utilization of an electronic MAR, which changed the way medications were transcribed to the medication record.
- When utilizing a traditional paper-based medication record, the nurse had the primary responsibility to transcribe the patient's medication orders to the record.
- The conversion to an electronic record generated daily, in conjunction with the utilization of the Hard Stop, placed the emphasis for transcription on the pharmacist.
- The nurse was now required to review the printed MAR for transcription omissions or discrepancies.

# Root Cause Analysis

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- **Clinical Interventions**

- Clinical drug interventions:  
Actions/interventions between the pharmacist and the ordering clinician to either clarify, correct, or discontinue a current order to the medication profile.
- Intervention occurs prior to dispensing and administration of medications/treatments ordered.

# Addressing Root Causes

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## Changes implemented:

- Converted from a paper-based medication administration record to an electronically generated MAR.
- Converted Hard Stop distribution from the pharmacist delivering the forms to the unit on a daily basis, to an electronically generated form.
- Educated medical, nursing, and pharmacy staff on the system changes.
- Revised the 24-hour order check process to reflect the need to review the daily generated MAR and Hard Stop.
- Initiated MAR communication stickers to capture transcription discrepancies.
- Began breaking down the clinical intervention categories into more specific areas to promote data capture.



# Addressing Root Causes

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## Changes implemented:

- Reinforced to the concerned pharmacy staff the importance of recording information when interventions occur.
- Encouraged the concerned nursing staff and pharmacy staff to use the MAR communication process rather than telephone communications, which cannot be tracked effectively.
- Aggregated data on a quarterly basis and reported results at the Medication Safety and Usage Committee and the Hospital-wide Performance Improvement Council meetings.
- Continue to meet bi-monthly to discuss concerns and issues related to medication management.
- Acted on nursing staff suggestions to revise the MAR communication process.

# Addressing Root Causes

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## Changes implemented:

- Revised the process that had previously required the nurse who noted the discrepancy to (a) photocopy the MAR, (b) apply a sticker to the MAR, and (c) fax the MAR to the pharmacy.
- Instead, the nurse would now (a) change the sticker to a form, (b) add additional categories such as incorrect or missing allergy information, and (c) have the order number attributed to the profile entry printed on the MAR, thereby essentially eliminating the need to fax the order to the pharmacy.
- Revised data aggregation from a quarterly process to monthly results, beginning in the second quarter of 2008.
- Continue to encourage all methods of reporting potential or actual medication errors.
- Use “Good Catch” awards as an avenue to provide staff recognition.



# Addressing Root Causes

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- This project did NOT require any additional staff or cost to implement.
- The processes were developed jointly by members of the Medication Safety and Usage Committee, which is an undertaking of the nursing and pharmacy departments.
- It did and continues to require staff education and reinforcement relating to the benefits of the program.

# Return on Investment

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- These changes have yielded increased satisfaction and improved patient safety in the work flow of both departments.
- The development of this project clearly demonstrated to both departments the value of a system of checks and balances when the medication order ordering process is combined of both electronic and paper components.
- The streamlined process implemented by changing to a form over a communication sticker reduced the number of steps the nurses were required to complete to report incorrect transcription on the MAR significantly and was accepted in lieu of a formal “occurrence report.”

# Return on Investment

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- The utilization of an order number to track a specific entry on the pharmacy profile allowed the pharmacy to access the specific order in question immediately or alerted them to the need that the order required re-faxing.
- The revision of the clinical interventions promoted data capture without increasing the workload of the pharmacist and prohibited dispensing of anticoagulants without corresponding laboratory values, thereby significantly increasing the pharmacy's role in the patient monitored intervention category.



# Monitoring and Evaluating Over Time

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- The number of MAR communications received and clinical interventions initiated are reviewed and aggregated on a monthly basis, with quarterly reporting at the Hospital-wide Performance Improvement Council.
- Since beginning to track these efforts in 2006, sustained reporting continues, with success demonstrated by the increasing number of MAR communications and clinical interventions since inception.



# Key Words

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- **Medication error:** The FDA defines a medication error as “any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the healthcare professional, patient, or consumer.”
- **Pre-empted error:** The problem was found and corrected before it reached the patient.
- **Clinical drug interventions:** Actions/interventions between the pharmacist and the ordering clinician to clarify, correct, or discontinue a current order to the medication profile. Intervention occurs prior to dispensing and administration of medications/treatments ordered.
- **Medication administration record (MAR):** Generated electronically on a daily basis by the Horizon Med Manager (HMM) Pharmacy System.



# Key Words

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- **Hard Stop:** A system within HMM that provides a 24-hour warning that a medication is due to expire. Expiration times are dictated by hospital or regulatory policy (e.g., controlled substance renewal is required every 72 hours). If a medication is NOT renewed by the clinician within the appropriate time frame, the medication will no longer appear on the MAR. Hard Stops are generated electronically daily on the nursing unit with the MAR.
- **24-hour order check:** A systematic review on a daily basis to ensure that the clinician's orders have been transcribed to the MAR correctly.
- **MAR communications:** An interdisciplinary communication tool that promotes real-time communication between the pharmacist and the nurse relating to transcription discrepancies noted in the completion of the 24-hour order check process.

# Pharmacy Clinical Interventions

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The interventions listed below were deemed appropriate as pre-empted medication errors:

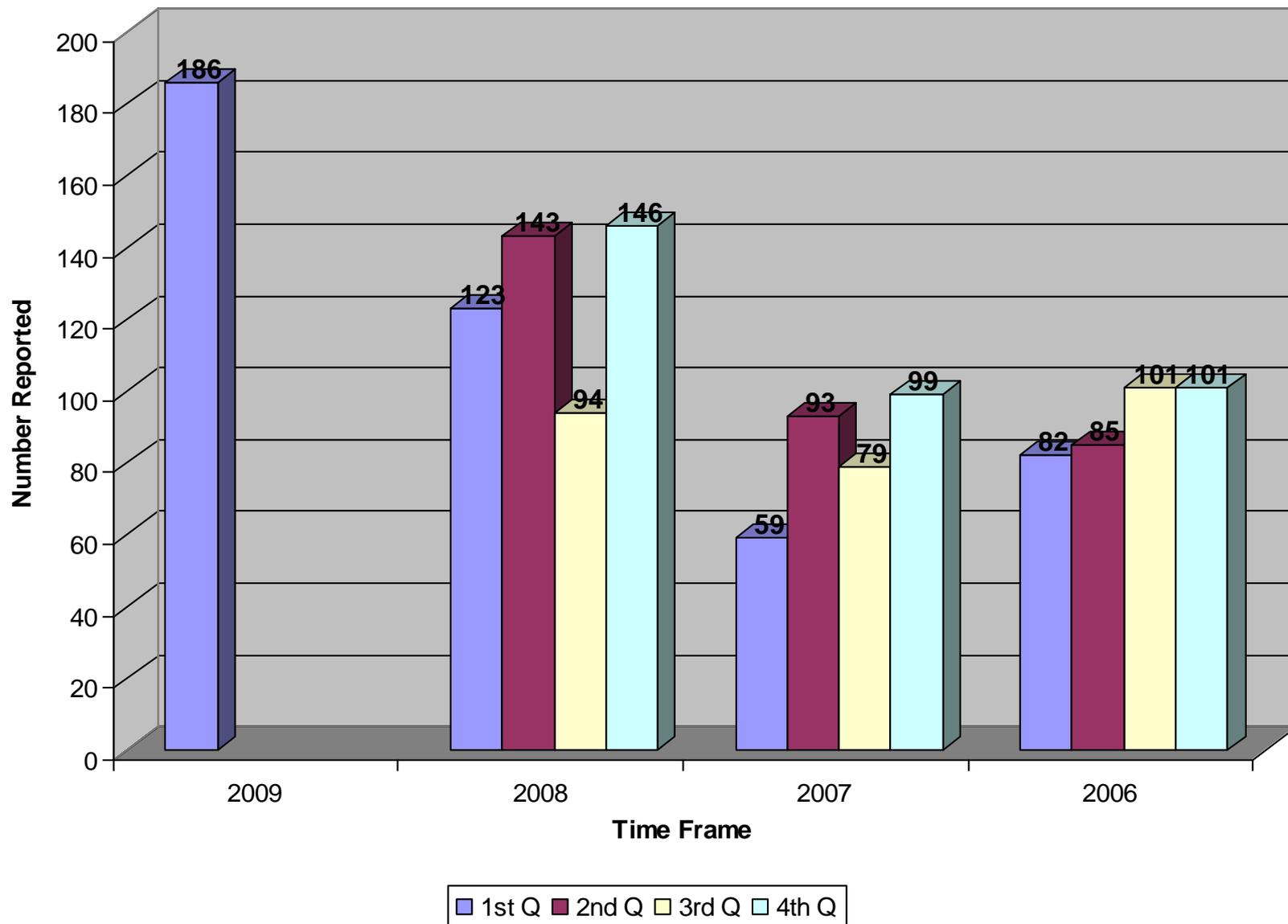
- Duplicate therapy/no indication
- Contraindication due to allergy/diagnosis
- Dose modification/organ impairment/age
- Interaction (drug or nutrient) or incompatibility
- Patient monitored (Lovenox/Cr/Cl;lytes; Erythropoetin/Hgb; Coumadin/INR)
- Drug incorrect/unclear/absent

# Pharmacy Clinical Interventions (cont'd):

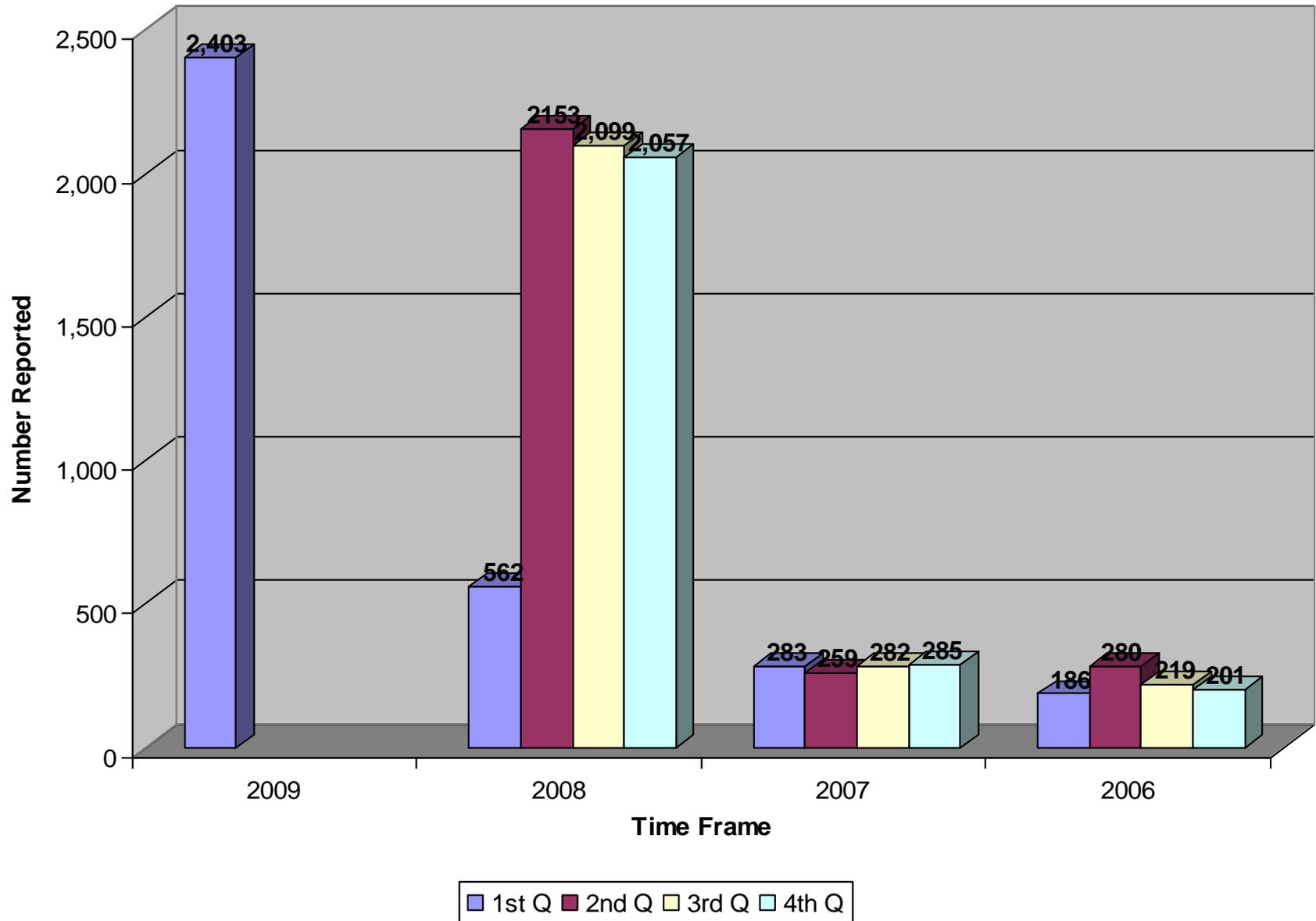
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- Dose incorrect/unclear/absent
- Frequency or rate incorrect/unclear/absent
- Dosage form incorrect/unclear/absent
- Route incorrect/unclear/absent
- Duration incorrect/unclear/absent
- Order clarification/communication
- PRN usage indication
- Range order clarification

# MAR Communications 2006-2009



# Pharmacy Clinical Interventions 2006-2009



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