Complexity and Vulnerability of Multi-Medication Compliance Aids

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Objectives:

- Traditional processing/dispensing of prescriptions is involved with high-level procedures; compliance packaging introduces further complexity and vulnerability in the pharmacy workflow due to its multi-compartmental design, which increases the unpredictability and variations of the medication-use system.

- The objective of this project is to gain a better understanding of the potential contributing factors for compliance-pack related medication incidents.

Methodology:

- We searched the Institute for Safe Medication Practices Canada (ISMP Canada) Community Pharmacy Incident Reporting (CPhIR) Program.[1] CPhIR provides users with a secure online interface to document medication incidents, export data for analysis, and view comparisons of individual pharmacy and aggregate data. CPhIR depends on voluntary reporting of medication incidents.

- We extracted medication incidents involving "blister pack", "compliance pack", "pill pack", and/or "bubble" from the period of June 2012 to May 2013. A total of 170 incident reports met inclusion criteria and were included in this qualitative, multi-incident analysis.

- We then analyzed selected medication incidents and categorized them into main themes and subthemes.

- We were able to provide practical recommendations to address patient-safety gaps after identifying potential contributing factors corresponding to compliance-pack related medication incidents.

Results: Two main themes were identified: (1) Order Entry and (2) Packaging Process

Theme 1:

ORDER ENTRY

Major concerns with order entry were associated with:

- Hospital discharge order
- Discontinuation of medication from new order
- New and prospective update of prescriptions
- Miscalculation

Theme 2:

PACKAGING PROCESS

Other concerns in regards to packaging process included:

- Labeling
- Incorrect time of administration
- Half-tablet medications
- Improper return-to-stock procedures
- Dose and medication omissions
- Incorrect medication and strength

INCIDENT EXAMPLE

Patient showed up at 4:30 pm and pharmacy's closing time was at 5:00 pm. The patient was discharged from a hospital with numerous changes to his blister pack. Several errors were made. (Yet, these errors were not discovered until the pharmacist was trying to fax the patient's family doctor for subsequent refills at a later time).

- Two prescriptions from the hospital discharge order were put under the patient's family doctor's name and not the hospital discharge doctor's.

- The SIG on allopurinol was read "TO the once daily."

- Clopidogrel was supposed to be continued for 39 days after discharge as per the hospital discharge order, but it was only filled for 28 days without putting the refill for the remaining 11 days. (Note: 28-day supply was typical for blister packs for a four-week supply).

- The pharmacy was rushing to get new orders from the patient's family doctor and calling the hospital to clarify for warfarin since it was not on the hospital discharge order, and it was supposed to be restarted after clopidogrel was finished.

RECOMMENDATIONS

- Verify the printed prescription labels with the most current prescription order(s), especially when there is a new update or change to the patient's profile, including hospital discharge order, new prescription, and/or discontinuation of medications, etc.

- Incorporate reminders on the computer system that will automatically flag any prospective changes needed to be made during the next compliance pack cycle.[2]

- Conduct independent double-checks whenever possible in the pharmacy workflow.[3]

- Implement barcode scanning (if possible) which serves as an automated independent double check to verify that the drug product and strength selected from the inventory matches with what has been entered into the patient's profile.[4]

Conclusion:

- Although multi-medication compliance aids may facilitate patient's adherence and improve treatment outcomes, the complexity of the design and procedures for preparation may potentially lead to an increased risk of errors.

- Recognizing the vulnerabilities of compliance pack preparation creates opportunities for pharmacists to implement additional safeguards to enhance medication safety.

- Creating a culture of patient safety with the support of a non-punitive reporting system needs to be encouraged within all areas of pharmacy practice.

References
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3. ISMP Canada. Lowering the risk of medication errors: Independent double checks. *ISMP Canada Safety Bulletin* 2005; 5(1): 1-2.
4. Institute for Safe Medication Practices. Double-checking bingo cards. *ISMP Medication Safety Alert! Community/ambulatory Care Edition* 2013; 12(10): 2-3.

ISMP Canada
Institute for Safe Medication Practices Canada
www.ismp-canada.org

CMIRPS
Canadian Medication Incident Reporting and Prevention System
www.ismp-canada.org/cmirps/

CPhIR
Community Pharmacy Incident Reporting Program
www.cphir.ca