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Potentially Inappropriate Medication Use in Older Adults: A Multi-Incident Analysis

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CMIRPS 
Canadian Medication Incident
Reporting and Prevention System



SCDPIM
Système canadien de déclaration et de
prévention des incidents médicamenteux



INTRODUCTION

Potentially inappropriate medication use: use of a drug in which the risk of an adverse event outweighs its clinical benefit, particularly when there is evidence in favour of a safer or more effective alternative therapy for the same condition.^{1,4}

- Half of the seniors taking five or more medications experienced an adverse effect requiring medical attention.² This included preventable side effects such as cognitive impairment, and falls which account for a significant portion of emergency room visits and hospitalization.^{2,3,4}
- The Beer's criteria⁶, STOPP criteria⁷, and the anticholinergic burden scale⁸ have been developed and applied in several different healthcare settings to prevent potentially inappropriate prescribing.

OBJECTIVE(S)

This multi-incident analysis identifies points of intervention in the community setting in order to prevent medication incidents that may compromise patient safety.

METHOD(S)

Searched ISMP Canada Community Pharmacy Incident Reporting (CPIR)¹⁴ Database for medication incidents involving drug therapy problems, contraindications, and duplications in patients over 65 years old from 2010 to 2015.

Selected Incidents for final analysis.


184 incidents met the inclusion criteria and were included in this multi-incident analysis.

Analyzed and categorized incidents into two themes and further divided into subthemes.

Identified potential contributing factors.


Provided recommendations to fill in patient-safety gaps

RESULT(S)

Theme	Subtheme	Possible Contributing Factors
 <p>Patient Specific Factors</p>	Intolerance or Allergies <i>Example) A patient previously taking Accupril™ 20mg received a new prescription for Accuretic™ 20mg/12.5mg. During prescription entry, the pharmacy assistant copied the Accupril™ over to Accuretic™; however, the patient had a documented sulfa allergy which was missed as a result. Furthermore pharmacist counselling was not done because the patient said "oh yeah, I know all about it". The patient later that day took a dose of the medication and experienced slight lip swelling which he had to consult a doctor. Accuretic™ was immediately discontinued.</i>	<ul style="list-style-type: none"> • Knowledge deficit with sulfonamide cross-reactivity • Lack of communication between practitioners for documented intolerances and allergies • Assuming the patient knows "all about it" • Look-alike, sound-alike drug names at order entry lead to the assumption that both medications were the same.
	Medical Conditions <i>Example) A doctor wrote a prescription for Zostavax® however the patient had a major contraindication (lymphoma). The injection was stopped immediately before the puncture of the skin.</i>	<ul style="list-style-type: none"> • Lack of knowledge to drug-disease interactions • Outdated records
	Inappropriate Dosing <i>Example) A doctor prescribed fentanyl to an opioid naive patient who was only taking acetaminophen 650mg extended release.</i>	<ul style="list-style-type: none"> • Lack of knowledge or awareness of indications and pharmacokinetics



Patient Specific Factors

 <p>Drug Interactions</p>	<div><h3>Antibiotics & Chronic Medications</h3><p>Example) A significant interaction between sulfamethoxazole/trimethoprim and Warfarin® was missed at order entry and checking but was discovered only when the patient asked. There was an interaction note at the bottom of the prescription hardcopy but was not seen during checking.</p></div> <div><ul style="list-style-type: none">Faulty computer system that does not pick up on drug-drug interactionsAlert fatigueLack of independent double checksIncomplete patient profile during prescribing</div> <div><h3>Interactions Between Chronic Medications</h3><p>Example) A patient on both Eliquis® and ASA 81mg was prescribed naproxen for 2 weeks. Patient had an incessant nose bleed that ended up requiring hospital treatment. The interaction wasn't relayed to doctor or staff of nursing home to monitor.</p></div> <div><ul style="list-style-type: none">Multiple medication useLack of monitoring and follow-upAlert fatigue</div> <div><h3>Drug Duplications</h3><p>Example) A nursing home patient was on Osto D2® 50,000 once daily prior to entering the nursing home. The home recently added Vitamin D 1000 IU daily on top of his existing medications. The patient also takes a daily multivitamin with Vitamin D. He developed Vitamin D toxicity. All vitamin D and calcium was discontinued and adequate hydration was recommended. Physician, pharmacist and nursing staff all missed the multiple sources of vitamin D.”</p></div> <div><ul style="list-style-type: none">Lack of communication between healthcare professionalsLack of knowledge of generic and brand names</div>
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Drug Interactions

CONCLUSION(S)

Hierarchy of Effectiveness Categories

Forcing Functions

- **Setup alert, restrict, or limit certain doses for older adults** by programming dispensing software¹⁰ (e.g. dose limits, high alert medications notifications, renally excreted drug reminders)
- **Restrict copying prescriptions** in drug dispensing software⁹
- **Ensure system is maintained** properly and is updated regularly¹¹
- **Review severity levels** for all drug-drug interaction alerts in pharmacy information systems to balance information needs and to manage “alert fatigue”¹¹
- **Implement computer alerts** to flag medications within the same class¹⁸
- **Ensure that all medication information available to patients and practitioners** includes the generic and brand name (e.g. medication labels, drug information documents, medication profiles)^{7,13}
- **Implement computer mnemonics** to minimize selection of the wrong medication (i.e. look a-like/sound a-like drug name pairs)^{7,8}

Automation or Computerization

Reminders, Checklists, Double Checks

- **Perform independent double checks**^{11,9}
- **Arrange for better patient care by scheduling follow-up** reminders at time of dispensing^{10,12}
- When a prescription is brought into the pharmacy, **verify with the patient or caregiver** any clinical information about the patient that is necessary to confirm the appropriateness of the medication and dose (e.g. allergies, opioid tolerance, indication for drug)¹⁸
- **Highlight the importance of** look-alike/sound-alike drug names as part of pharmacy staff trainings and internal communication
- **Educate staff/physicians** on medication classes with sulfonamide cross-sensitivities
- **Offer a comprehensive medication review** for patients to carry with them to their doctor appointments⁹
- **Educate patients** on the importance of retaining an updated medication list^{5,6}

Rules & Policies Education & Information

ACKNOWLEDGEMENTS

ISMP Canada would like to acknowledge support from the Ontario Ministry of Health and Long-Term Care for the development of the Community Pharmacy Incident Reporting (CPhIR) Program (<http://www.cphir.ca>). The CPhIR Program also contributes to the Canadian Medication Incident Reporting and Prevention System (CMIRPS) (<http://www.ismp-canada.org/cmiprs/>). A goal of CMIRPS is to analyze medication incident reports and develop recommendations for enhancing medication safety in all healthcare settings. The incidents anonymously reported by community pharmacy practitioners to CPhIR were extremely helpful in the preparation of this multi-centric analysis.

REFERENCES

- [illegible]

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