

# Potentially inappropriate medication use in older adults: A multi-incident analysis

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**P**atients aged 65 years old and above represent the fastest growing segment of the Canadian population. Chronic medication use has now become the norm in geriatric healthcare, as quality of life for geriatrics has increased and younger population cohorts exhibit less healthy behaviours compared to previous generations. Inappropriate medication use may lead to patient harm when factoring in the myriad of complex health issues and risk factors that older adults experience.

We conducted a multi-incident analysis on medication use in older adults in order to gather data on the prevalence and impact of potentially inappropriate drug use to mitigate patient harm and improve medication safety. Medication incidents were extracted from the ISMP

Canada Community Pharmacy Incident Reporting (CPhIR) Program from 2010 to 2015. A total of 184 medication incidents were included in this analysis. Qualitatively, two major themes were realized: (1) patient-specific factors and (2) drug interactions.

## PATIENT-SPECIFIC FACTORS

Patient-specific factors refer to individual-specific criteria in older adults that may potentiate patient harm when using medications. These include allergies and intolerances, medical conditions, and inappropriate dosing based on age. Potential causes identified were the lack of transparency or consistency among healthcare practitioners in documenting patient allergies and intolerances, outdated patient records,

and knowledge deficits regarding cross-allergic reactions, drug-disease interactions, and pharmacokinetic properties in geriatric patients.

## DRUG INTERACTIONS

Drug interactions refer to medication incidents that involved a combination of two or more medications that resulted in sub-therapeutic effects or drug toxicity. These include interactions between antibiotics and chronic medications, chronic medication interactions, and drug duplications. Underlying trends that may potentiate medication incidents associated with drug interactions include faulty drug-use-evaluation software, healthcare practitioners' alert fatigue, lack of communication within the patient's circle of care, and lack of independent double checks in the medication-use process.

## RECOMMENDATIONS

Utilizing the hierarchy of effectiveness, we developed a list of recommendations for healthcare professionals to implement in their practice to reduce the risk of potentially inappropriate medication use in older adults (Table 1).

Providing effective healthcare solutions for the growing numbers of geriatric patients is a challenge for our current healthcare landscape. Medication management for older adults involves a high degree of complexity and often requires intervention from multiple healthcare providers within the patient's circle of care. ISMP Canada remains dedicated to providing effective strategies to mitigate patient harm from medication use and continues to encourage anonymous reporting of medication incidents for the purpose of shared learning. ■

Table 1	Summary of Recommendations	Hierarchy of Effectiveness	
	<ul style="list-style-type: none"> <li>Consider programming the pharmacy practice management system or pharmacy dispensing software to restrict or alert certain dosages for older adults (e.g. high-alert medications, renally excreted medications, etc.)</li> <li>Restrict the "copying prescription" function in pharmacy practice management system or pharmacy dispensing software</li> </ul>	Forcing Functions	
	<ul style="list-style-type: none"> <li>Ensure pharmacy practice management system and clinical decision support system are maintained properly and updated regularly</li> <li>Review severity levels for drug-drug interaction alerts in pharmacy clinical decision support system or information management system to balance information needs and prevent alert fatigue</li> <li>Implement computer alerts to flag medications within the same therapeutic class 4</li> <li>Ensure all medication information provided to patients and healthcare practitioners includes both generic and brand name (e.g. medication labels, drug information documents, medication profiles)</li> <li>Implement computer mnemonics to minimize selection of the wrong medication (e.g. look-alike/sound-alike drug name pairs)</li> </ul>	Automation or Computerization	High-to-medium effectiveness
	<ul style="list-style-type: none"> <li>Perform independent double checks in the medication-use process</li> <li>Schedule follow-up appointments or reminders with patients at the time of dispensing</li> </ul>	Reminders, Checklists, Double Checks	
	<ul style="list-style-type: none"> <li>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 its dose (e.g. allergies, opioid tolerance, indication of the prescription, etc.)</li> </ul>	Rules and Policies	Medium-to-low effectiveness
	<ul style="list-style-type: none"> <li>Highlight the importance of look-alike/sound-alike drug names as part of pharmacy staff trainings and internal communication</li> <li>Educate patients on the importance of retaining a best possible medication history or an up-to-date medication list</li> </ul>	Education and Information	

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