Objectives
- Medication incidents can result in sub-optimal disease management or expose patients to unnecessary drug therapy, calling attention to the need to adopt strategies to mitigate risks and improve medication safety.
- The objective of the study was to gain a deeper understanding of the possible contributing factors to incidents associated with patient harm, and to develop recommendations to prevent incident recurrence.

Methodology
- A total of 971 medication incidents associated with patient harm were extracted from the Institute for Safe Medication Practices Canada (ISMP Canada) Community Pharmacy Incident Reporting (CMIRP) Program from 2009 to 2017.
- Following exclusion criteria, we conducted a qualitative, thematic analysis of 909 incidents, and provided recommendation to address patient safety gaps corresponding to harm related incidents.

Inadequate training of personnel.
- Look-a-like, sound-a-like medications.
- Lack of standardized compounding process.
- Re-made and the patient reported no burning.
- Preparing of packs weeks in advance of pick-up.

Incident Example:
- A patient was prescribed hydrochlorothiazide and her second patient arrived for his dose, but it could not be found.
- The technician who prepared it did not get another staff member involved.
- Blister packs were repackaged to include the medication. When the following day the pharmacist was reviewing the rationale, there was a prescription for diclofenac. It was discovered that the patient received moxifloxacin. The pharmacist had prescribed it for the patient's dog.
- The patient complained of tight throat over several days. He/she went to emergency and was diagnosed with an allergic reaction to moxifloxacin. The pharmacist had prescribed it for the patient's dog.

Cases of incorrect medication selection are often attributed to knowledge deficit of the practitioner. They may be due to a lack of awareness or understanding of the implications of errors, or incomplete knowledge of drug selection and dosing guidelines. Knowledge deficit of the practitioner.

Knowledge deficit of the practitioner.
- Too many insignificant alerts resulting in “alert fatigue”.
- Inadequate alert to indicate the potential for interactions/drug allergies and be updated regularly to prevent “alert fatigue”.
- Inadequate check of patient understanding.

Less Effective / More Feasible
- 1. Implement electronic Health Records and E-prescribing in pharmacy practice [Automation and Computerization].
- 2. Have standardization for follow-up of problematic orders and hand-offs between health care professionals [Simplification and Standardization].
- 3. Use “know and tell” and “teach back” technique to ensure understanding during counseling [Reminders, Checklists, Double Checks].

More Effective / Less Feasible
- 1. Implement Electronic Health Records and E-prescribing in pharmacy practice [Automation and Computerization].
- 2. Implement blister packs [Simplification and Standardization].
- 3. Provide education and information [Simplification and Standardization].

INTERPROFESSIONAL COLLABORATION
- The nurse contacted the pharmacy for a refill of a patient’s prescription for Arthrotel® (diclofenac/sodium). There was no record of Arthrotel® on the patient file, but there was a prescription for diclofenac. It was discovered that, in addition to receiving diclofenac, the patient was taking a sample of Arthrotel® that he received from the doctor.

More Effective / Less Feasible
- 1. Implement Electronic Health Records and E-prescribing in pharmacy practice [Automation and Computerization].
- 2. Double Checks [Simplification and Standardization].
- 3. Reminders, checklists, double checks [Simplification and Standardization].
- 4. Have standardization for follow-up of problematic orders and hand-offs between health care professionals [Simplification and Standardization].
- 5. Use “know and tell” and “teach back” technique to ensure understanding during counseling [Reminders, Checklists, Double Checks].

DRUG-DRUG INTERACTION
- Incidence of drug interactions can be reduced by using clinical decision support systems (CDSS) to detect potential drug interactions and alert the prescriber to potential “alert fatigue”.
- Forcing functions can provide a platform for reflection and shared understanding.
- Relevant information on known dangerous drug interactions.

Less Effective / More Feasible
- 1. Clinical decision support systems (CDSS) for prescribers and pharmacists should have the functionality to detect drug-drug interactions and alert the prescriber to potential “alert fatigue”.
- 2. Develop standardized procedures and documentation when a drug interaction or drug allergy is identified [Simplification and Standardization].
- 3. Double check allergy status at order entry and pick-up [Reminders, Checklists, and Double Checks].
- 4. Require documentation when a drug interaction or allergy occurs over, and audit regularly [Rules and Policies].

More Effective / Less Feasible
- 1. Implement Electronic Health Records and E-prescribing in pharmacy practice [Automation and Computerization].
- 2. Reminders, checklists, double checks [Simplification and Standardization].
- 3. Have standardization for follow-up of problematic orders and hand-offs between health care professionals [Simplification and Standardization].
- 4. Use “know and tell” and “teach back” technique to ensure understanding during counseling [Reminders, Checklists, Double Checks].
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