

# Medication incidents that could have been prevented at the prescribing stage

By Jim Kong, Kacy Park, and Certina Ho

**S**ystems-based vulnerabilities are reflected in the volume and type of medication errors, and anonymous reporting demonstrates a commitment to an open culture of sharing and quality improvement by healthcare professionals. For a patient, a medication error can range from a near-miss to patient death, with varying degrees of severity in between. The prescribing stage represents the patient’s first contact within the medication-use process and is an important milestone in helping to guide patients to positive outcomes and better health. Thus, to be able to definitively address medication incidents and prevent patient harm, ISMP Canada conducted a multi-incident analysis focusing on the prescribing stage of the medication-use process to highlight potential areas for improvement.

Incidents were retrieved from ISMP Canada’s Community Pharmacy Incident Reporting (CPhIR) program from the period between January 2010 and April 2015. Inclusion criteria included all levels

of harm to patients with the exception of “No Error”. The decision to exclude data from hospital reporting programs allowed ISMP Canada to gain an understanding of the more broad prescribing landscape of the community setting, which expands our exposure to medication errors in a non-formulary-limited prescribing environment. A total of two main themes and seven subthemes were identified by this analysis.

## Therapeutic Plan Error

Therapeutic plan error refers to medication incidents that occurred during the prescribing stage as a result of any therapeutic oversight of a patient’s pharmacotherapy plan. The four subthemes that fall under this category include Incorrect Dose, Medication Discrepancy, Allergy, and Drug-Drug Interactions. A prescriber’s intentions are not always clearly outlined, and there is a lack of a standardized format for prescribers to confirm recommendations or aspects regarding dose appropriateness. These issues highlight the need for a readily-available, compre-

hensive medical information platform for healthcare professionals to refer to when prescribing medications. Any gap in patient medication history knowledge lends itself to mistakes being made at all stages of the medication-use process, with the prescribing stage acting as the initial onset for this cascading effect. Recommendations based on the hierarchy of effectiveness and best medication practices are outlined in Table 1.

## Therapeutic Plan Execution Error

The second main theme of this multi-incident analysis was therapeutic medication plan execution error which refers to medication incidents that occurred due to the technical aspects of the prescribing stage. This includes subthemes such as Incomplete Prescription, Illegible Writing, and Wrong Patient. With the multitude of drug products on the current market, there is an increased need for vigilance when providing prescriptions to patients. Although the technical aspects of a prescription are

often overlooked as minor issues, occurrences still have the potential to cause severe patient harm. The implementation of computerized physician order entry (CPOE) systems remains a powerful tool to help prescribers prevent medication errors. Recommendations based on the hierarchy of effectiveness and best medication practices are outlined in Table 2.

Prescribers currently have more point-of-care tools or resources at their disposal than ever before and the opportunities to mitigate patient harm are vast. The proper use of clinical decision support systems and order entry sets can help overcome the therapeutic and technical limitations of prescribing, helping prescribers achieve their desired and optimal patient outcome **■**

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Table 1. Recommendations to prevent Therapeutic Plan Errors

Subtheme	Contributing Factors	Recommendations
Incorrect Dose	Lack of process to confirm recommendations or therapy appropriateness	Use standardized order sets Increase access to therapeutic information resources Patient education on signs and symptoms of over/under-dosing of medications
Medication Discrepancy	Lack of appropriate clinical decision support system	Implement user-friendly clinical decision support system
Allergy	Alert fatigue	Check-point barriers for high-risk alerts
Drug-Drug Interactions	Lack of relevant patient information	Utilize mandatory data entry fields when gathering information from patients Conduct Best Possible Medication History (BPMH) during initial interaction with patients Involvement of patients and caregivers to ensure compliance of medication therapy

Table 2. Recommendations to prevent Therapeutic Plan Execution Errors

Subtheme	Contributing Factors	Recommendations
Incomplete Prescription	Lack of forcing functions/reminders for data entry fields	Utilize CPOE systems with mandatory prescription fields* Utilize pre-printed order sets Independent double checks Staff education regarding mandatory prescription data entry fields
Illegible Writing	Lack of process to ensure prescription legibility	Utilize CPOE systems*
Wrong Patient	Lack of process to confirm patient identity	Incorporate process for ensuring prescription legibility before providing prescription to patient Alerts for similar patient profiles Utilize two separate patient identifiers at each stage of the medication-use process

\*CPOE systems may introduce other safety challenges in the medication use process. Therefore, always assess the risks versus benefits of using a new system in the workplace/workflow before widespread implementation.