

Mandatory Quality-Related Event Reporting in Canada A Province-Wide Review Over Seven Years (2010-2017)

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Objectives

- The Community Pharmacy Incident Reporting (CPhIR) program is designed by the Institute for Safe Medication Practices Canada (ISMP Canada), a national medication safety organization. CPhIR contributes to the Canadian Medication Incident Reporting and Prevention System (CMIRPS).
- SafetyNET-Rx is a standardized continuous quality improvement (CQI) program for community pharmacies in Nova Scotia, Canada. It aims to create an open dialogue on quality-related events (QREs) in pharmacies and facilitate shared learning to advance patient and medication safety.
- The aim of this study is to quantify and characterize medication-related QREs anonymously reported to CPhIR by community pharmacies in Nova Scotia over 7 years.

Methods

- A retrospective analysis was conducted on medication-related QREs from Nova Scotia community pharmacies occurring between October 1, 2010 and June 30, 2017.
- Descriptive analysis was performed on all medication-related QREs with respect to outcome, type of incident, discoverer, medication system stages, and medications involved.

FIGURE 1.
QREs REPORTED BY OUTCOME

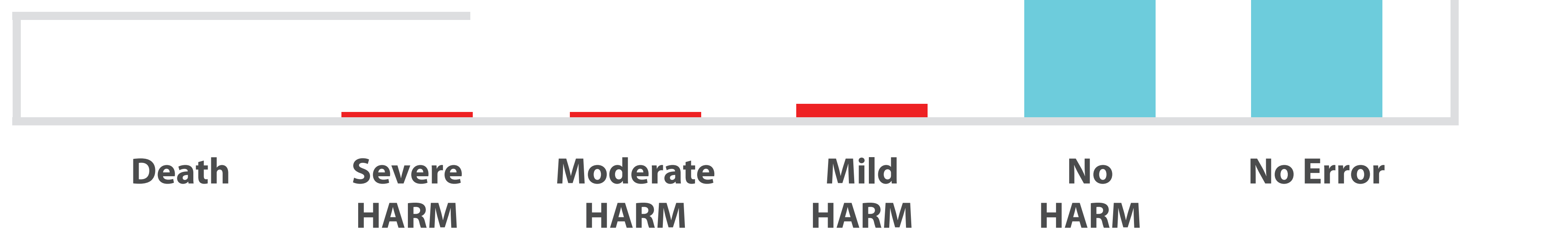


FIGURE 2.
QREs REPORTED BY TYPE OF INCIDENT

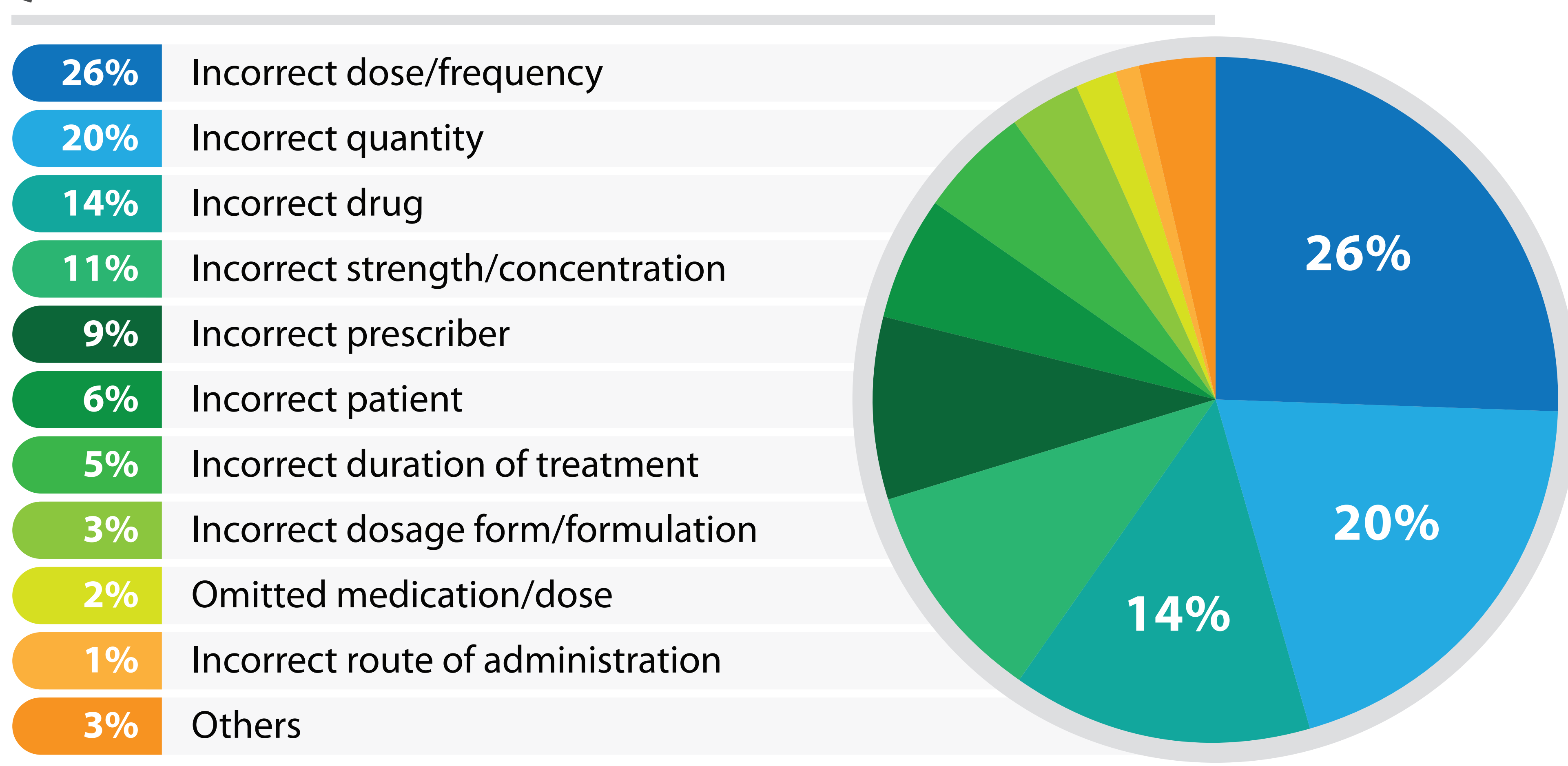


TABLE 1.
TOP 10 MEDICATIONS WITH RESPECT TO THE NUMBER OF REPORTED QREs

Medication	Number of QREs
Levothyroxine sodium	2,433 (2.34%)
Amoxicillin	2,361 (2.27%)
Rosuvastatin	1,905 (1.84%)
Lorazepam	1,840 (1.77%)
Hydromorphone	1,826 (1.76%)
Metoprolol	1,786 (1.72%)
Salbutamol	1,745 (1.68%)
Metformin	1,568 (1.51%)
Rabeprazole	1,459 (1.41%)
Zopiclone	1,374 (1.32%)

TABLE 2.
TOP 10 MEDICATIONS BY PROPORTION OF QREs REPORTED WITH HARM (MINIMUM OF 10 QREs REPORTED WITH HARM)

Medication	Number of QREs Reported with Harm	Number of QREs	Proportion of QREs Reported with Harm
Methadone	19 (1.79%)	184 (0.18%)	10.33%
Risperidone	11 (1.03%)	313 (0.30%)	3.51%
Warfarin	22 (2.07%)	746 (0.72%)	2.95%
Morphine	16 (1.50%)	568 (0.55%)	2.82%
Atenolol	14 (1.32%)	544 (0.52%)	2.57%
Citalopram	27 (2.54%)	1,261 (1.21%)	2.14%
Norgestimate and estrogen	10 (0.94%)	528 (0.51%)	1.89%
Levothyroxine sodium	46 (4.32%)	2,433 (2.34%)	1.89%
Gliclazide	13 (1.22%)	694 (0.67%)	1.87%
Ramipril	14 (1.32%)	778 (0.75%)	1.80%

*Total of all reported medications in QREs with harm (excluding free-form entry of medication name) **Total of all reported medications in QREs (excluding free-form entry of medication name)

The authors would like to acknowledge the support from: The Nova Scotia College of Pharmacists, The Institute for Safe Medication Practices Canada, The SafetyNET-Rx Research Team, The Advanced Pharmacy Practice Experience program and the Enhancing the Student Experience Fund at the Leslie Dan Faculty of Pharmacy, University of Toronto, Dalhousie University

Disclosures: Authors of this poster have the following to disclose concerning possible personal or financial relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation: **Adrian Boucher: Nothing to disclose; Certina Ho: Nothing to disclose; Todd A. Boyle: Nothing to disclose; James Barker: Nothing to disclose; Bev Zwicker: Nothing to disclose; Neil MacKinnon: Nothing to disclose.**

Results

- A total of 131,031 QREs were anonymously reported by 301 community pharmacies in Nova Scotia. Of those, 74.87% (98,097) were medication-related QREs.
- Overall, 82.05% (80,488) of reported medication-related QREs did not reach the patient (i.e. near misses). A small proportion, 0.95% (928), reached the patient and resulted in harm (Figure 1).
- The most common types of QREs were incorrect dose/frequency, incorrect quantity, and incorrect drug (Figure 2).
- Pharmacists discovered the majority of medication-related QREs (75.17%), followed by pharmacy assistants/technicians (10.29%) and patients (9.92%).
- The most frequently reported medication system stage was order entry (58.71%), followed by prescription preparation/dispensing (29.30%), and prescribing (8.96%).
- The most frequently reported medications were levothyroxine sodium, amoxicillin, and rosuvastatin (Table 1). (Note: It is possible that the likelihood of a medication to be involved in a QRE is correlated with the frequency the medication is dispensed in community pharmacy.)
- Medications with the highest proportion of QREs reported with harm were methadone, risperidone, and warfarin (Table 2).

Conclusions

- Medication-related QREs from community pharmacies differ from other healthcare settings reported in the literature, with respect to outcome, type of incident, discoverer, medication system stages, and medications involved.
- These findings provide direction on how to best focus resources to prevent QREs in community pharmacy.
- Through the analysis of QREs and sharing of findings, practitioners can learn from reported QREs and implement safeguards.
- Creating a culture of patient safety with the support of an anonymous, non-punitive reporting system needs to be encouraged within all areas of pharmacy practice.