COMPASS Phase III Incident Analysis Report
Prepared by ISMP Canada
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INTRODUCTION:

Incidents as part of the Community Pharmacists Advancing Safety in Saskatchewan (COMPASS™) Phase III were abstracted from the Community Pharmacy Incident Reporting (CPhIR) database. 119 community pharmacies participated in phase III, and the data spanned from January 1st, 2016 to December 31st, 2016, totalling 2046 incidents.

QUANTITATIVE ANALYSIS:

All 2046 incidents obtained from the CPhIR database were analysed. The vast majority of the incidents were near misses (75%). Of those reported as incidents that has reached the patient (25%), most caused no harm (93%) [Figure A]. The majority of the incidents occurred at stages of prescribing (24%), transcribing (43%) and preparation/dispensing (23%), resulting in 90% of the reported incidents [Figure B]. The most common type of incident was incorrect dose/frequency (28%), followed by incorrect drug and incorrect quantity (16% each) [Figure C]. The top three error prone classes of medication are the nervous system (26%), the cardiovascular system (18%) and the alimentary tract and metabolism (15%) [Figure D].

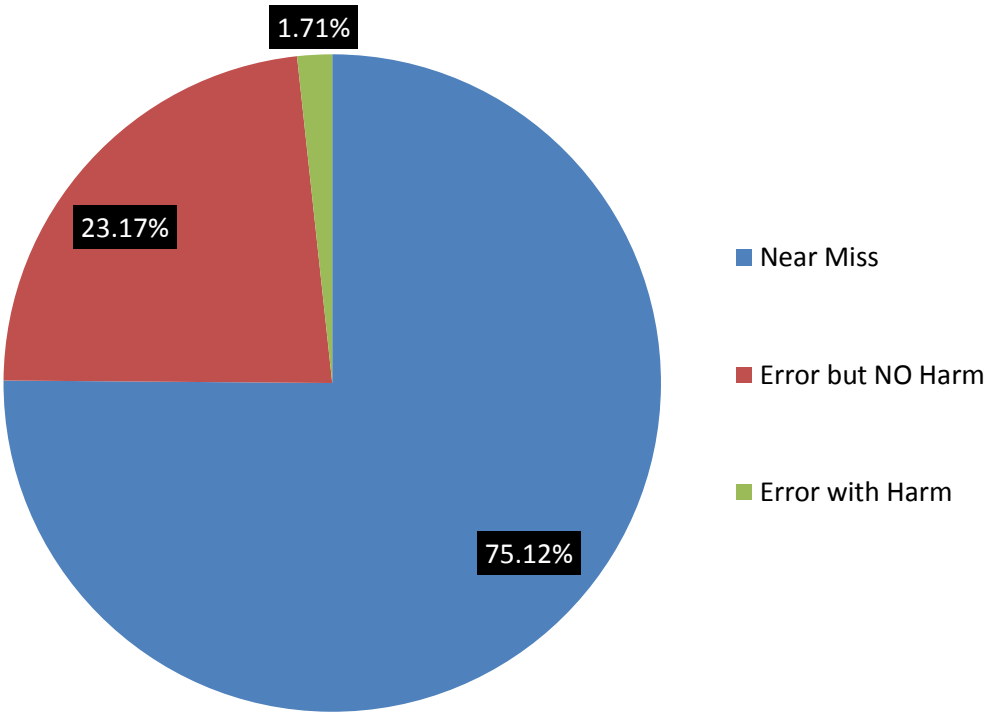

Figure A: Severity of the reported incidents. Incidents were categorized as: near miss, which are incidents that did not reach the patient; error but no harm, which are incidents that reached the patient but did not cause harm; and error with harm, which are incidents that reached the patient and caused some degree of harm.

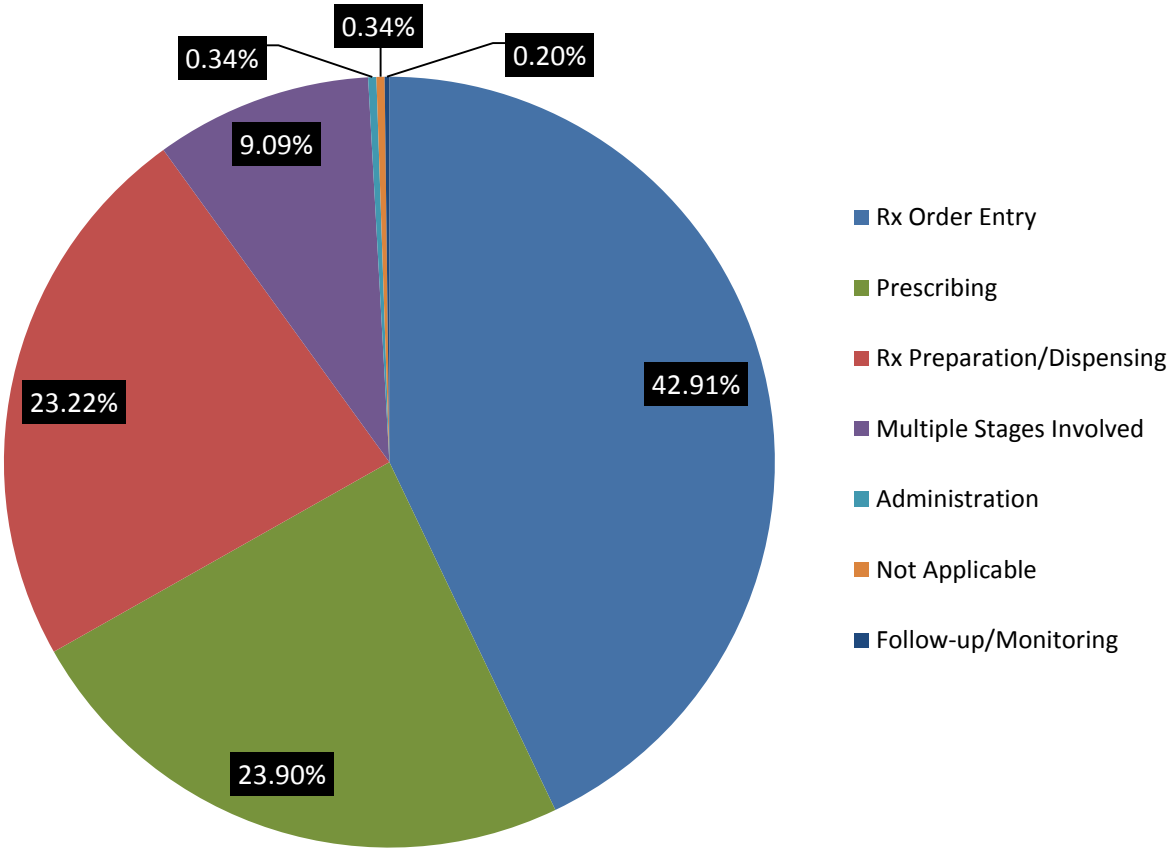

Figure B: The proportion of the reported incidents that occurred at each stage of the medication use process.

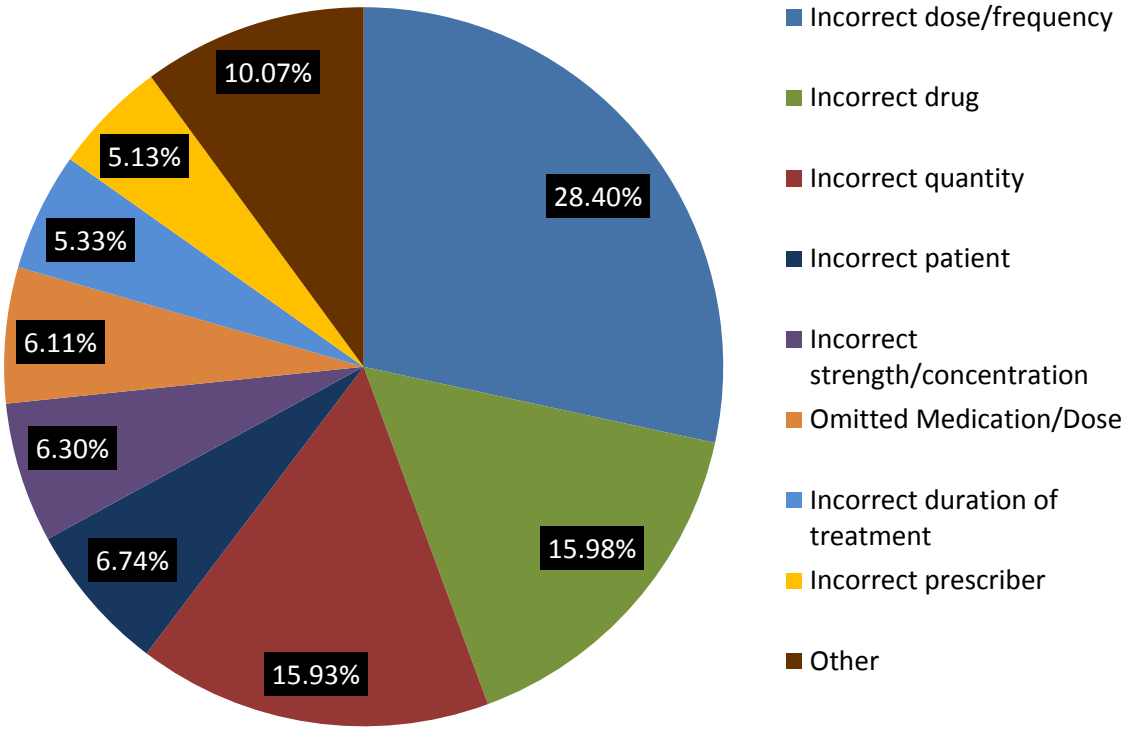

Figure C: The types of reported incidents. Due the relative infrequency of some types of incidents, those that occurred less than 5% were categorized as "Other". These types include (in descending order of frequency): Incorrect third-party billing (3.32%), incorrect dosage form/formulation (2.54%), incorrect route of administration (1.32%), contraindication (1.12%), drug-drug/OTC/NHP interactions (0.59%), documented allergy (0.49%), incorrect storage (0.44%), adverse drug reactions (0.1%), drug-disease interaction (0.1%), and expired medication (0.05%).

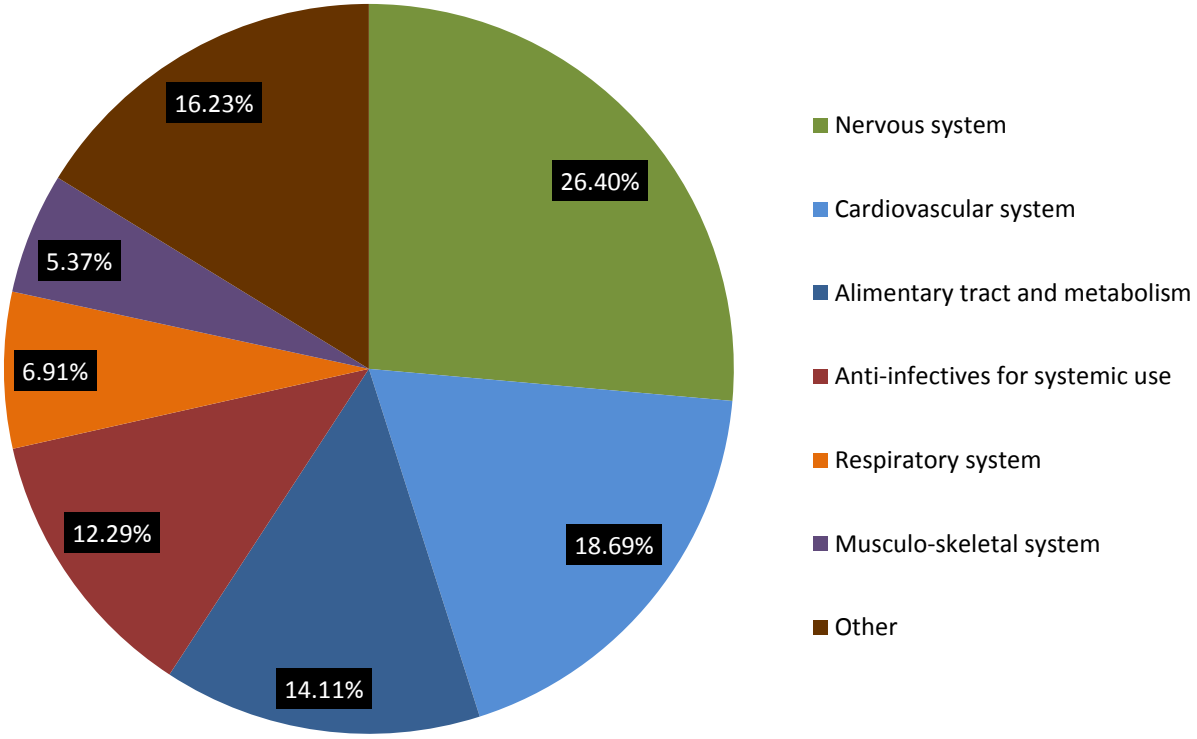

Figure D: The anatomic therapeutic chemical (ATC) classification of the medications involved in the reported incidents. ATCs that occurred less than 5% were categorized into "Other" due to their relative infrequency. These include (in descending order of frequency): blood and blood forming organs (3.54%), dermatologicals (3.54%), systemic hormonal preparations, excluding sex hormones and insulins (3.31%), genito-urinary system and sex hormones (2.63%), sensory organs (2.06%), antineoplastic and immunomodulating agents (0.8%), antiparasitic products, insecticides and repellents (0.39%), and various (0.06%).

QUALITATIVE ANALYSIS:

In a previous report on COMPASS Phase II, qualitative analysis was performed on all incidents with the potential of harm (resulting in mild, severe, temporary, or long-term symptoms) and near misses that were caught or intercepted before reaching the patient. As such, the purpose of the phase III report will focus mainly on the incidents with the potential of harm that has reached the patient.

INCLUSION CRITERIA:

Incidents included in this analysis are those with the potential of harm that has reached the patient. The incidents included those where the end result is no harm to the patient, or those that caused some harm resulting in mild, severe, temporary, or long-term symptoms.

EXCLUSION CRITERIA:

A total of 1631 incidents were excluded for the qualitative analysis with the following exclusion criteria:

1. Incidents defined as "Near misses", which were caught or intercepted before reaching the patient.
2. Incidents defined as "Wrong prescriber", with no potential to harm the patient.
3. Incidents defined as "Incorrect third-party billing", with no potential to harm the patient.
4. Incident description without sufficient information on how the error occurred.

LIMITATIONS:

There are a few limitations to the qualitative analysis of COMPASS Phase III.

1. The incidents used in the analysis were based on voluntary reporting to CPhIR.
2. The details of the incidents were subject to the individual reporting.
3. Due to the nature of anonymous reporting through CPhIR, follow-up with the individual reporter is not possible.

The summary of the qualitative analysis is outlined below.

Table 1: Main Theme 1, Subthemes, and Incident Examples

INTERPROFESSIONAL COLLABORATION With health care becoming increasingly collaborative, different health care professionals are using the full scope of their practice to deliver quality care to the patients. 38 incidents involved communication and collaborating between the members of the team. These incidents include members of the health care team detecting each other's mistakes and communicating this to their colleagues, but also include situations where this communication breaks down and medication errors occur.	
Pharmacist Initiated Interventions: • With the expanded scope giving pharmacists access to lab values, this provides opportunities to ensure the patients are receiving the most appropriate therapy.	"[Doctor] wrote [prescription] for Synthroid® 75mcg [once daily]. We faxed him saying patient had been taking ½ [tablet once daily] and he faxed back [confirming] the increase to 1 full [tablet]...I checked the lab portal and [the patient] haven't had bloodwork done [since the last time 6 months ago] and it was normal. So I faxed [the doctor] again wondering why we are changing the strength when no bloodwork was done. He faxed back [agreeing] to keep at ½ [tablet once daily]."
Nurse Initiated Interventions: • Nurses play a pivotal role in the administration of the medication to the patients and act as another safeguard against medication errors.	"Long term care patient had a new order for doxycycline 100mg [twice daily for] 5 days and then a subsequent order for the same drug daily [for] one month, but the ongoing order [was] missed. The nurse called and inquired why the daily dose was not included in the packs and this is how the error was discovered."
Breakdown in Communication: • Clear communication is key when working within a team. There are a number of incidents that highlight miscommunication and lack of access of information can lead to potentially harmful situations.	"[Prescription for furosemide] was brought in for an increase [from] 80mg to 100mg, however it was written for 20mg [each day]…patient was already on 80mg. We did not clarify with the [doctor] and assumed it was a decrease."

Table 2: Main Theme 2, Subthemes, and Incident Examples

PATIENT/CAREGIVER INITIATED MEDICATION SAFETY ENHANCEMENTS

Health care teams do not only comprise of the health care professionals, patients are also a key player in the team. Incorporating the patient and/or their caregiver into the circle of care can help prevent and catch potentially harmful medication incidents. There were 153 incidents where the patient or their caregiver played an active role in catching the errors.

Change in Physical Appearance of the Medication: • Patients are usually very aware of the appearance of their medications and/or the medication packaging, therefore, an unintended medication change, leading to differing appearance is easily caught by the patient.	"Patient was to be given amitriptyline 50mg, but 25 mg was put in the bottle instead. The [prescription] was entered properly, the wrong bottle was grabbed. Patient picked up the [prescription], she noticed the colour change right away and called us, none were taken. She brought it back and was fixed."
Inappropriate Quantity: • Having the right quantity of medication in the bottle is another visual indicator patients use to double check the medications they received.	"Patient called back to pharmacy saying he only had 7 pills in his bottle but the label stated he was to take 1 tablet four times a day for 7 days. When the [prescription] was entered, the [quantity] 28 and the days' supply were reversed."
Adequate Counseling on Drug Therapy: • Information provided to the patient through verbal counseling or drug information sheets allow the patient to evaluate the appropriateness of their medication; the appropriateness of their dose; and catch unintentional changes to their medications.	"New [prescription] came in for felodipine 2.5mg. We had 5mg tablets on hand so we directed the patient to take ½. Patient called back a month later saying that the drug info pamphlets said not to cut them. We investigated and found this was true and ordered the correct strength."
Wrong Patient: • Errors in dispensing the medication to the wrong patient are commonly caused by same/similar patient names. These incidents are usually caught by the patient upon review of their medication.	"Patient picked up a prescription, there was another patient with the same name in our system…The patient noticed [within an] hour and returned the wrong bag and was given the correct bag."

Table 3: Main Theme 3, Subthemes, and Incident Examples

COMPLIANCE PACKAGING

Compliance packaging was associated with 45 incidents. Four subthemes were identified in COMPASS III. These themes were also highlighted in a multi-incident analysis ISMP Canada released regarding compliance packaging incidents (http://www.ismp-canada.org/download/PharmacyConnection/PC2014Winter_PackPreparation.pdf).

Regimen Changes From New Prescriptions: • Changes to a patient's medication regimen are frequent for compliance packages. These changes include discontinuation of a medication, addition of a medication or dose adjustments of existing medications. These changes can be missed by the pharmacy team leading to medication errors.	"Tolteradine was stopped for patient; Toviaz® was prescribed in its place. The patient's [medications] are provided in compliance packaging and administered by an aid. The aid saw that the tolteradine was still in the compliance pack with the new Toviaz® prescription as well."
Dose/medication Omissions: • Compliance package preparation is a multi-step process that involves order entry, creating a Medication Administration Record (MAR), and packaging. This creates a number of steps where a medication or dose can be omitted from the patient's package.	"Pharmacist from [another pharmacy] called as patient is there and suffered a seizure. Clobazam levels were done and found to be low. It was suspected he was not getting his clobazam. [Relief pharmacy] filled [prescription] but mistakenly did not enter the clobazam into the unit dose section of the [prescription] so it neglected to print on the bubble pack sheets and missed getting into the patient's bubble pack."
Incorrect Time of Administration: • During the compliance package preparation, there are a number of incidents involving blister packs being sent to the patient with medications added to the wrong time slot or tablets/capsules jumping from their designated slot to another.	"Patient gets her medications blister packed. She takes her Synthroid® on its own on an empty stomach. For blisters, Synthroid® is in AM blister marked 8am and all other morning [medications] are packaged in noon blister labelled 8:30am. This set of blisters she brought back [has all medications] put in the morning blister."
Wrong Drug/Strength: • Patients receiving compliance packages are usually on multiple medications. The complexity created by multiple medications and added difficulty when checking can result in dispensing errors such as incorrect drug and strength. This is further complicated by the need to split some tablets for the proper strength.	"Nursing home returned with the medication. Tablets were packaged incorrectly as whole tablets when they should have been split into halves."

Table 4: Main Theme 4, Subthemes, and Incident Examples

DISPENSING

Medication preparation and dispensing process is involved in 179 incidents. These incidents highlight some of the potential causes of dispensing errors. They also highlight areas where the pharmacy system weaknesses can also contribute to medication errors.

Medications that contain the same active ingredient: • The proper dosage form, release timing and delivery route is crucial to ensure therapeutic efficacy and minimize adverse reactions. When one active ingredient is available in multiple dosage forms, extra care must be given to ensure the patient receives the specific formulation prescribed to them.	"[Patient] received eye ointment instead of drop and couldn't [administer the medication]"
Combination Medications: • Drug products that contain one common active ingredient but differ in others pose potential risks for dispensing related errors. Additional vigilance is needed during the product selection process.	"Patient brought in a [prescription] for Coversyl® Plus HD to be filled – was given Coversyl® Plus [instead]. DIN checked noted on [prescription] label and pharmacist initials on box. Patient brought back [the] incorrect drug."
Look Alike/Sound Alike Medications: • Medications or their packaging that look and/or sound alike can result in the pharmacy staff selecting the wrong medication.	"Prescription for escitalopram 10mg came into the pharmacy and the pharmacist filled the prescription and dispensed as citalopram 10mg. The patient took the [medication] for one month and then brought in a new prescription for escitalopram 10mg. Another pharmacist and the patient were very confused as what medication [the patient] was supposed to be taking."
Copying Over Prescriptions: • Confirmation bias at the stage of order entry often leads to the pharmacy staff missing key changes to the patient's medication therapy.	"[The patient brought in a prescription for ramipril]. There was a very clear note, even underlined, that states "lowered dose" but the assistant filling the [prescription] did not notice. He simply copied over the old prescription and just added refills."

CONCLUSION:

This analysis of the medication incidents from COMPASS Phase III in 2016 identified the importance of having good communication within the circle of care of patients. Furthermore, the patient has become one of the key pieces of the circle, not only as the one receiving care, but also one who can play a pivotal role in identifying and catching medication errors.

It is hoped that this multi-incident analysis demonstrated the importance to reporting and analysis of medication incidents as learning opportunities for pharmacy practitioners to prevent similar incidents from occurring in the future.

ACKNOWLEDGEMENTS:

ISMP Canada would like to acknowledge the Saskatchewan College of Pharmacy Professionals (SCPP) for its support and facilitation of COMPASS Phase III. The incidents anonymously reported by COMPASS Phase III community pharmacy practitioners to CPhIR were extremely helpful in the preparation of this report.

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/cmirps/index.htm). A goal of CMIRPS is to analyze medication incident reports and develop recommendations for enhancing medication safety in all healthcare settings.