COMPASS
Community Pharmacy Professionals
Advancing **Safety** in Saskatchewan

[directions]

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COMPASS Harm Incidents Quantitative Analysis

December 1st, 2017 to January 31st, 2019

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Objective

Community Pharmacy Professionals Advancing Safety in Saskatchewan (**COMPASS**) is a standardized continuous quality improvement (CQI) program specific to Saskatchewan community pharmacies. The objective of this analysis is to provide a quantitative analysis of harm incidents submitted to the Institute of Safety Medication Practices Canada (**ISMP**), Canada Community Pharmacy Incident Reporting (**CPhIR**) Program by COMPASS pharmacies and provide an insight into any potential recurring trends/patterns in the occurrence and/or reporting of harm incidents in Saskatchewan community pharmacies.

Results

A total of 267 harm incidents were reported, comprising of 247 mild harm incidents, 16 moderate harm incidents, 4 severe harm incidents, and no death incidents (Figure 2).

Figure 2. Total Number of Harm Incidents Reported (n = 267)

Key Learning Point #1:

The majority of the reported harm incidents in the study period were mild harm (93%), with only a small percentage of all reported incidents categorized as severe harm (1%).

Table 1. Total Number of Incidents Based on Error Type

Error Type	Number of Incidents (n = 267)	Percentage of Moderate/ Severe Harm Incidents*
Drug Therapy Problem – Contraindication	1	1/20 = 5.0%
Expired medication	1	0/20 = 0.0%
Incorrect duration of treatment	1	0/20 = 0.0%
Incorrect storage	1	0/20 = 0.0%
Drug Therapy Problem – Drug-disease interaction	2	1/20 = 5.0%
Incorrect route of administration	3	0/20 = 0.0%
Drug Therapy Problem – Adverse Drug Reaction	7	1/20 = 5.0%
Drug Therapy Problem – Documented allergy	**8**	**4/20 = 20.0%**
Incorrect patient	8	0/20 = 0.0%
Incorrect quantity	13	0/20 = 0.0%
Incorrect dosage form/formulation (include not splitting tablets as per patient's request)	19	0/20 = 0.0%
Omitted Medication/Dose	25	2/20 = 10.0%
Incorrect strength/concentration	47	3/20 = 15.0%
Incorrect drug	**55**	**4/20 = 20.0%**
Incorrect dose/frequency	76	3/20 = 15.0%

*** Moderate/Severe Harm Incidents (n = 20)**

Based on Table 1, the top 5 error types implicated in harm incidents were:

1) Incorrect dose/frequency	(76/267) – 28.46%	15.0% of Mod./Severe Harm
2) Incorrect drug	(55/267) – 20.60%	20.0% of Mod./Severe Harm
3) Incorrect strength/ concentration	(47/267) – 17.60%	15.0% of Mod./Severe Harm
4) Omitted Medication/Dose	(25/267) – 9.36%	10.0% of Mod./Severe Harm
5) Incorrect dosage form/ formulation	(19/267) – 7.12%	0.0% of Mod./Severe Harm

Key Learning Point #2:

Although incorrect dose/frequency was implicated in more total numbers of harm incidents, incorrect drug and drug therapy problem – documented allergy actually resulted in more percentage of incidents (20%) that led to moderate/severe harm.

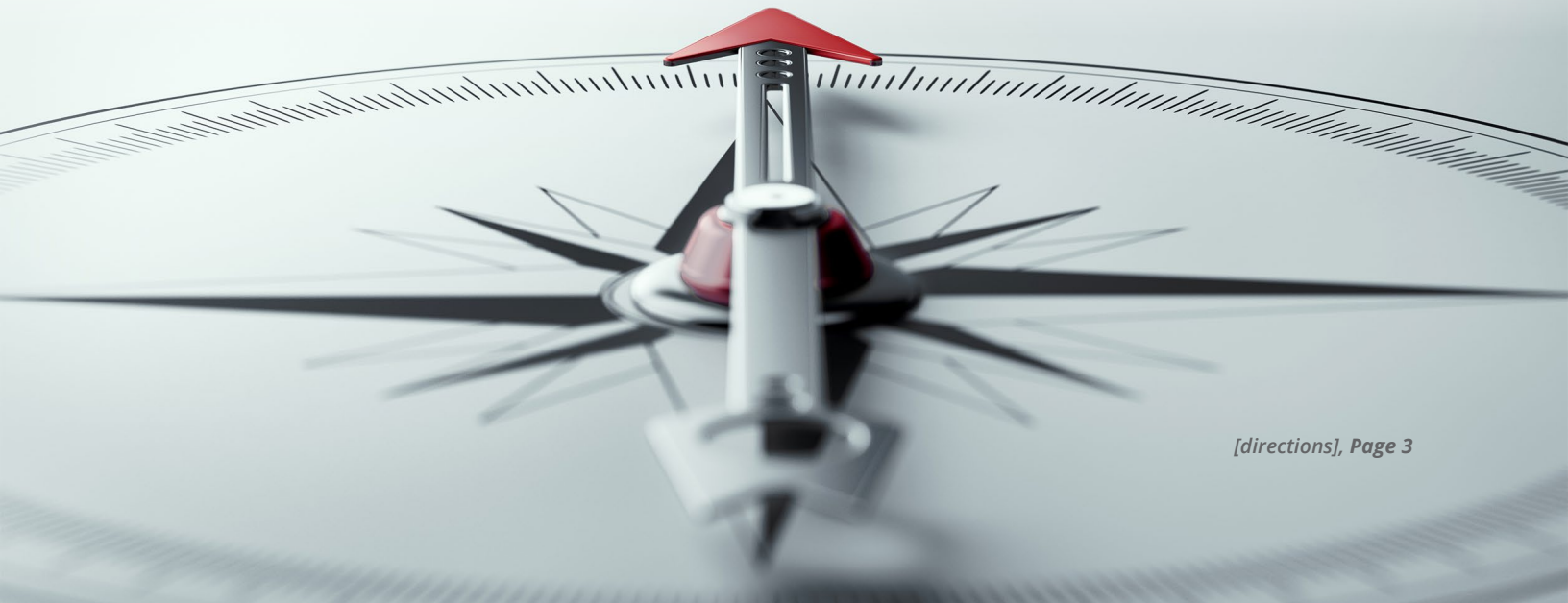

Table 2. Total Number of Harm Incidents based on Discoverer

Discoverer	Number of Incidents (n = 267)
Community Care Access Centre (CCAC) Home Care Coordinator	1
Nursing Student	1
Patient's Friend/Visitor	1
Pharmacy Student	1
Other	1
Patient's Caregiver/Home Aid/ Assistant	8
Pharmacy Technician/Assistant	10
Patient's Family Member/Relative	17
Nurse	24
Physician	27
Patient	**79**
Pharmacist	**97**

Based on Table 2, the top five discoverers of harm incidents were:

1) Pharmacist	(97/267) – 36.33%
2) Patient	(79/267) – 29.59%
3) Physician	(27/267) – 10.11%
4) Nurse	(24/267) – 8.99%
5) Patient's Family Member/Relative	(17/267) – 6.37%

Key Learning Point #3:

Although most harm incidents were discovered by pharmacists, other pharmacy staff members (such as pharmacy technicians/ assistants and pharmacy students) should also be engaged to report medication incidents and near misses.

During the reporting period from December 1, 2017 to January 31, 2019, there were incidents that were retroactively reported, dating back to May 2017. For the purposes of the analysis of harm incidents *occurred* and distributed by month, a complete 12-month dataset is required. Thus, all reported harm incidents with the date of *occurrence* before January 1, 2018 and after December 31, 2018 were excluded for the following tables and graphs: Table 3, Table 4, Figure 3, and Figure 4.

Between January 1, 2018 and December 31, 2018, a total of 222 harm incidents *occurred*, comprising of 203 mild harm incidents, 15 moderate harm incidents, 4 severe harm incidents, and no death incidents (Table 3, Figure 3, Table 4, and Figure 4).

Table 3. Number of Harm Incidents by Month from January 1, 2018 to December 31, 2018

Date	Number of Incidents Occurred (n = 222)
January	15
February	19
March	**27**
April	**27**
May	21
June	20
July	13
August	18
September	18
October	20
November	13
December	**11**
Total	**222**

Figure 3. Number of Harm Incidents Occurred by Month in 2018 (n = 222)

Key Learning Point #4:

In 2018, most of the harm incidents occurred in the months of March and April; with the least number occurred in December. The average number of harm incidents occurred in COMPASS pharmacies in 2018 was (222 / 12 = 18.5) 19 incidents per month.

Table 4. Number of Harm Incidents Occurred by Month in Different Degrees of Harm from January 1, 2018 to December 31, 2018

Month	Mild Harm	Moderate Harm	Severe Harm
January	15	–	–
February	17	2	–
March	22	5	–
April	25	1	1
May	21	–	–
June	18	2	–
July	12	1	–
August	15	1	2
September	16	2	–
October	20	–	–
November	13	–	–
December	9	1	1
Total	**203**	**15**	**4**

Figure 4. Distribution of Harm Incidents Occurred by Month in 2018 in Different Degrees of Harm

Key Learning Point #5:

March 2018 had the highest number of moderate harm incidents occurred and the highest overall harm incidents occurred.

Table 5. Medications that were implicated in moderate/severe harm incidents (n = 19)

Incident Category	Drug Name	Drug Class	Therapeutic Areas
Moderate Harm	Furosemide	Diuretic	Cardiovascular
	Amlodipine	Calcium Channel Blocker	Cardiovascular
	Diltiazem	Calcium Channel Blocker (non-DHP)	Cardiovascular
	Amoxicillin/ Clavulin	Antibiotic	Infectious Disease
	Cefuroxime	Antibiotic	Infectious Disease
	Macrobid	Antibiotic	Infectious Disease
	Warfarin	Anticoagulant	Cardiovascular
	Clopidogrel	Antiplatelet	Cardiovascular
	Baclofen	Muscle Relaxant	Pain
	Diphenhydramine HCl Injection	Antihistamine	Allergy
	Sotalol	Beta Blocker	Cardiovascular
	Clonazepam	Benzodiazepine	Psychiatric Disorders
	Ropinirole	Dopamine Agonist	Parkinson's Disease
	Synthroid	Thyroid Product	Thyroid
	Valacyclovir	Antiviral	Infectious Disease
Severe Harm	Ciprofloxacin	Antibiotic	Infectious Disease
	Methadone	Opioid	Pain
	Lantus Insulin	Insulin	Diabetes

Key Learning Point #6:

In terms of moderate/severe harm incidents, antibiotics were associated with the majority of these incidents. Methadone was involved in two severe harm incidents. Medications that fall under the therapeutic areas of cardiovascular disease states and infectious disease were associated with most of the moderate/severe harm incidents.

Conclusion

COMPASS is a standardized continuous quality improvement (CQI) program specific to Saskatchewan community pharmacies and it has been mandatory for all Saskatchewan community pharmacies since December 1, 2017. We conducted a quantitative analysis of harm incidents submitted to the ISMP Canada Community Pharmacy Incident Reporting (CPhIR) Program by COMPASS pharmacies. Majority of the reported harm incidents were mild harm. Although majority of the harm incidents were reported as incorrect dose/frequency, the type of incidents that were associated with moderate/severe harm were due to incorrect drug and/or drug therapy problems with respect to documented allergy.

Currently, most harm incidents were discovered by pharmacists. We believe that other pharmacy staff members (such as pharmacy technicians/assistants and pharmacy students) can be more engaged in COMPASS.

Based on the number of reported harm incidents in 2018, March and April seem to be the months where most of these incidents occurred, of which March had the highest number of moderate harm incidents occurred. On average, 19 harm incidents occurred per month in Saskatchewan community pharmacy practice.

With respect to medications, antibiotics were associated with the majority of moderate/severe harm incidents and methadone, in particular, with severe harm incidents. In general, cardiovascular medications, opioids, and antimicrobials are more likely associated with moderate/severe harm incidents.

Overall, this is a preliminary insight into some potential trends/patterns in the occurrence and/or reporting of harm incidents in Saskatchewan community pharmacies. Further analysis in the narrative/description of the reported harm incidents should inform us with more information pertaining to contributing factors and possible solutions/interventions to prevent patient harm from medications.

Quality Improvement Reviews are Coming!

Quality Improvement Reviews (QIRs) have been delayed due to the development of online tools and forms taking longer than anticipated. We are now in the final stages of development and testing.

During the QIRs, the Field Officers will be reviewing the pharmacy's quality improvement activities. Pharmacies that have not kept up-to-date on reporting incidents or have not completed their Medication Safety Self-Assessment are encouraged to complete these activities. If Quality Improvement (QI) Coordinators, Pharmacy Managers or pharmacy staff have any questions with respect to QIRs, quality improvement activities or any of the tools utilized for COMPASS, please contact Jeannette Sandiford at **info@saskpharm.ca** or 306-584-2292.

Shared Learning Opportunity

One of the goals of COMPASS is to promote shared learning between Saskatchewan pharmacies regarding incidents, unsafe practices and other important issues in order to improve pharmacy care in Saskatchewan. One way to promote shared learning is to report any noteworthy incidents/errors that occurred within your pharmacy. If you have had an incident that you feel would be a good learning opportunity for other Saskatchewan pharmacies, please forward it to Jeannette Sandiford at **jeannette.sandiford@saskpharm.ca**. Any information regarding the pharmacy and the person who provided the details of the incidents/errors will be kept anonymous. We encourage you to provide us with these incidents/errors so we can all learn from them.

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Incident Reported for Shared Learning

An incident was reported to SCPP with the hope of raising awareness for all Saskatchewan pharmacy staff and to allow for discussion amongst the staff to identify if this incident could potentially occur in their pharmacy and take proactive measures to prevent the occurrence.

A patient that required home infusions for enzyme replacement therapy had experienced infusion-related reactions and therefore needed to be pre-treated with IV methylprednisolone (SOLU-MEDROL or methylprednisolone succinate). While being prepared for treatment in the clinic, the PIP profile was reviewed, and it was noticed that the community pharmacy had been filling IM methylprednisolone (DEPO-MEDROL or methylprednisolone acetate). It is recommended by both ISMP Canada and the manufacturer to not administer the acetate salt intravenously. The error was communicated to the physician and pharmacies, the formulation was changed to the correct form IV methylprednisolone. The patient was unharmed, and the error was disclosed to the family.

Some of the contributing factors that potentially increased the occurrence of this incidents and possible solutions are the following:

1. The dosage form was unusual and one that is not generally dispensed in the community setting. The hospital pharmacist who originally set up the prescription could have confirmed the dosage form with the community pharmacy.
2. The incident was somewhat perpetuated because it was originally filled incorrectly at the initial pharmacy and then transferred to the second pharmacy.
3. SOLU-MEDROL is not on the Saskatchewan Drug Formulary, only DEPO-MEDROL is formulary. Pharmacists could think that the products were interchangeable or were unaware that the other formulation existed.
4. The DEPO-MEDROL vials do have a “Not for IV use” label, however it is very small and very easy to miss this warning.
5. The original prescription was written as follows: *“Methylprednisolone 30 mg IV once weekly prior to infusion”*. Pharmacists unfamiliar with the medication may be unaware that a second formulation exists and simply stating “IV” is not enough to know that the succinate formulation must be dispensed.

SCPP would like to thank the pharmacist that submitted this incident and encourage others to report any incidents that they feel may be helpful as a shared learning opportunity.

Statistics

Statistical reports are provided to bring awareness of the importance of identifying, reporting and discussing medication incidents. A total of **10,792** incidents have been reported to the Community Pharmacy Incident Reporting (CPhIR) database between December 1, 2017 and March 31, 2019. All statistics below are for the time period of December 1, 2017 to March 31, 2019.

Incident Types

The top three types of incidents being:

- incorrect dose/frequency – **2,565**
- incorrect quantity – **1,879**
- incorrect drug – **1,869**

Outcomes

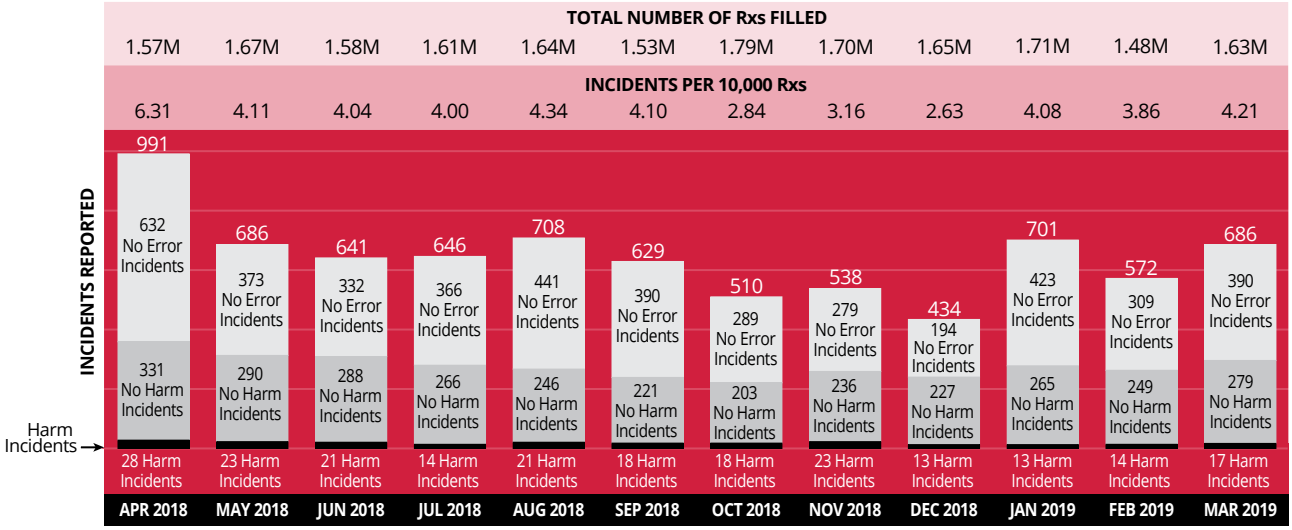
The majority or **6,168** of incidents reported had an outcome of NO ERROR, which means the incidents were intercepted BEFORE they reached the patient.

There were **4,330** NO HARM incidents, which means the incidents reached the patient, but did not cause harm.

294 reported incidents did result in HARM, with most of these in the category of MILD HARM.

352 pharmacies have either completed or started their Medication Safety Self-Assessment (MSSA) online data entries and **221** Continuous Quality Improvement (CQI) meetings have been held.

Total Rxs Filled and Incidents Reported April 2018 – March 2019



Resources that can help your team address specific medication issues

The SMART Medication Safety Agenda


Community Pharmacy Incident Reporting (CPhIR)
February 2019
SMART Medication Safety Agenda
Insulin [68:20:16 Anti-Diabetic Agents Insulins (Pre-mixed)]
SMART Medication Safety Agenda
The Community Pharmacy Incident Reporting (CPhIR) program is designed for you to report and analyze medication incidents that occurred in your pharmacy. You can learn about medication incidents that have occurred in other pharmacies through the use of the SMART Medication Safety Agenda.
The SMART (Specific, Measurable, Attainable, Relevant and Time-based) Medication Safety Agenda consists of actual medication incidents that were anonymously reported to the CPhIR program. Potential contributing factors and recommendations are provided to you and your staff to initiate discussion and encourage collaboration in continuous quality improvement. By putting together an assessment or action plan, and monitoring its progress, the SMART Medication Safety Agenda may help reduce the risk of similar medication incidents from occurring at your pharmacy.
How to Use the SMART Medication Safety Agenda
1. Convene a meeting for your pharmacy team to discuss each medication incident presented (p. 2).
2. Review each medication incident to see if similar incidents have occurred or have the potential to occur at your pharmacy.
3. Discuss the potential contributing factors and recommendations provided.
4. Document your team's assessment or action plan to address similar medication incidents that may occur or may have occurred at your pharmacy (Table 2).
5. Evaluate the effectiveness and feasibility (Table 1) of your team's suggested solutions or action plan.
6. Monitor the progress of your team's assessment or action plan.
7. Enter the date of completion of your team's assessment or action plan (Table 2).
Table 1.
Effectiveness and Feasibility
Effectiveness:
Suggested solution(s) or action plan should be system-based, i.e. shifting a focus from *"what we need to do ..."* to *"what we can do to our environment to work around us."*
1. High Leverage – most effective
   - Forcing function and constraints
   - Automation and computerization
2. Medium Leverage – intermediate effectiveness
   - Simplification and standardization
   - Reminders, checklists, and double checks
3. Low leverage – least effective
   - Rules and policies
   - Education and information
Feasibility:
Suggested solution(s) or action plan should be feasible or achievable within your pharmacy, both from the perspectives of human resources and physical environment.
1. Feasible immediately
2. Feasible in 6 to 12 months
3. Feasible only if other resources and support are available
CHIRPS SCDPIM

The **S**pecific, **M**easurable, **A**ttainable, **R**elevant and **T**ime-based) Medication Safety Agenda was introduced by the Institute of Safety Medication Practices Canada (ISMP Canada) to increase shared learning among pharmacies. It deals with a specific drug or process within a community pharmacy and the incidents that have occurred with that drug or process. The SMART Medication Safety Agenda consists of actual medication incidents that have been anonymously reported into the Community Pharmacy Incident Reporting (CPhIR) program. Potential contributing factors and recommendations are provided for users to initiate discussion and encourage collaboration towards continuous quality improvement in the pharmacy. By putting together an assessment or action plan and monitoring its progress, the SMART Medication Safety Agenda can help raise awareness regarding similar medication incidents in the pharmacy.

The following YouTube video is a step by step guide for pharmacy professionals to learn to use the SMART Medication Safety Agenda.

https://youtu.be/zFTwL-mt0Xw

The topic of the latest edition of the SMART Medication Agenda is Insulin. All previous editions of the SMART Medication Safety Agenda can be found under the COMPASS link on the SCPP website under **COMPASS Newsletters**.

Medication Safety Exchange Webinars

ISMP Canada offers complimentary bi-monthly 50-minute webinars that provide a platform for frontline healthcare practitioners to share and learn about medication incident analyses and medication safety initiatives with colleagues across Canada.

The agenda for the webinar includes a healthcare professional outlining a medication incident that occurred in their practice site, and sharing the results of the incident analysis including contributing factors, as well as recommendations arising from the investigation. Healthcare professionals or health organizations offer presentations on medication safety initiatives implemented locally or nationally. Organizations such as ISMP Canada, Health Canada and the Canadian Patient Safety Institute also provide a Medication Safety Update. Participants are also given the opportunity to discuss and ask questions about the learnings shared in the webinar presentations.

These webinars are complimentary but you are asked to register beforehand by **visiting ISMP Canada's website**. The next Med Safety Exchange webinar is scheduled for May 15, 2019. Be sure to view past webinars that date back to Fall 2017 on the same linked page. The Med Safety Exchange webinars provide an opportunity for pharmacy staff to learn about medication incidents occurring elsewhere that can help prevent similar errors in their pharmacy practice.

Article adapted from College of Pharmacists of Manitoba – e-Quipped newsletter – Vol. 5

Contact Information

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