Institute for Safe Medication Practices Canada
REPORT MEDICATION INCIDENTS
Online: www.ismp-canada.org/err_index.htm
Phone: 1-866-544-7672

A KEY PARTNER IN
CMIRPS Canadian Medication Incident Reporting and Prevention System
SCDPIM Système canadien de déclaration et de prévention des incidents médicamenteux

ISMP Canada Safety Bulletin

Volume 18 • Issue 5 • June 27, 2018

Safe Storage and Disposal of Medications

- *Engage in conversation with patients about the safe storage of medications in the home and about the safe disposal of unnecessary or expired medications.*
- *Share online and written resources about safe medication storage and disposal.*
- *Determine whether practices, such as removal of unnecessary medications by a home-visiting pharmacist or return of medications to a pharmacy, are available in your area, and advise patients accordingly.*

Improper storage and disposal of medications in the home have resulted in medication errors, accidental poisonings, inappropriate use, and diversion.[1-3] Children in Canada continue to experience harm through accidental ingestion of improperly stored or discarded medications and poisons, despite the implementation of child-resistant packaging.[4]

ISMP Canada, with the support of the Canadian Patient Safety Institute (CPSI) and partners, has developed key messages to guide both clinicians and patients on the safe storage and disposal of medications in the community.

Safe Storage

Medications, including those in compliance packaging, should be stored out of sight and out of reach of children. The ideal medication storage location provides easy accessibility for the intended user while preventing or discouraging inappropriate access and accidental ingestion by anyone else, especially children. Most unintentional pediatric ingestion occurs at home and involves medications stored at a height within easy reach of a toddler or child. A locking device is strongly suggested, either for the medication container or for the cabinet in which medications are stored.[4,5]

Safe Disposal

Patients and their caregivers may need to dispose of prescription and nonprescription medications for various reasons, such as failure to complete a course of therapy; change in treatment, dose, or clinical condition; or product expiry. The ideal method of medication disposal should be easy to perform, should minimize risk for diversion, should not impose a financial burden, and should be environmentally sound. Taking unused medications to a community pharmacy for proper disposal meets all of these criteria and is therefore recommended.

Disposing of medications in the trash is not acceptable, because home garbage containers are

often vulnerable to access by children and pets, as well as to drug diversion. Although flushing medications down the toilet has often been used as a disposal alternative, there are compelling arguments against widespread use of this practice, given that the potential environmental and health impact of most products is unknown.[6,7] The US Food and Drug Administration has published a list of medicines, notably potent opioids, for which disposal by flushing may be acceptable when more responsible, take-back options are not readily available.[6]

Topical patches containing opioids, such as fentanyl and buprenorphine, pose unique disposal risks. The Patch-for-Patch Fentanyl Return Policy is an Ontario legislative initiative[8,9] that aims to reduce the risk of harm; evaluation of this program will be of interest.

The website of the Health Products Stewardship Association (HPSA) provides information about locations and processes for safe medication disposal in every Canadian province. The HPSA also administers medication return programs for participating pharmacies in British Columbia, Manitoba, Ontario, and Prince Edward Island; through these programs, patients can take unneeded medications to participating pharmacies (Box 1). In addition, HPSA, its partners, and participating pharmacies conduct an annual campaign encouraging families to declutter their medicine cabinets and to return unneeded and expired medicines to the pharmacy.

Box 1. Examples of items that can be returned to participating pharmacies in British Columbia, Manitoba, Ontario, and Prince Edward Island:

- Prescription medications
- Over-the-counter drugs
- Natural health products
- Opioid patches

Special Circumstances

Upon the death of a person who has been receiving palliative or end-of-life care in the home, the family is often left to dispose of the patient's unused medications. A "situation assessment" was conducted at an Ontario hospital by a multidisciplinary team to evaluate methods for disposal of unused medications in these circumstances.[10] The study objectives were to identify preferred practices and to provide educational materials for families and healthcare providers with the ultimate goal of improving medication storage and disposal in these cases. A suitable action identified by the team was to have a pharmacist conduct an in-home medication review and remove unused medications. Another good practice is to have the home care service provider pick-up symptom relief kits* when they are no longer needed.[10] These practices can facilitate the appropriate return and disposal of unused medications.

Resources for Patients and Families

ISMP Canada is working with several partners, including the CPSI and Patients for Patient Safety Canada, to integrate key messaging about safe storage and disposal of medications into various patient resources. "Prevent Medication Accidents" (Figure 1) is an information card developed to provide key information for patients and families about proper storage and disposal of unnecessary medications in the home.[11]

Another resource handout was developed to address the proper use, secure storage, and disposal of opioids prescribed to treat pain after surgery (Figure 2).[12] This information card was built on the "5 Questions to Ask about Your Medications" movement and was launched by Choosing Wisely Canada as part of the Opioid Wisely campaign.

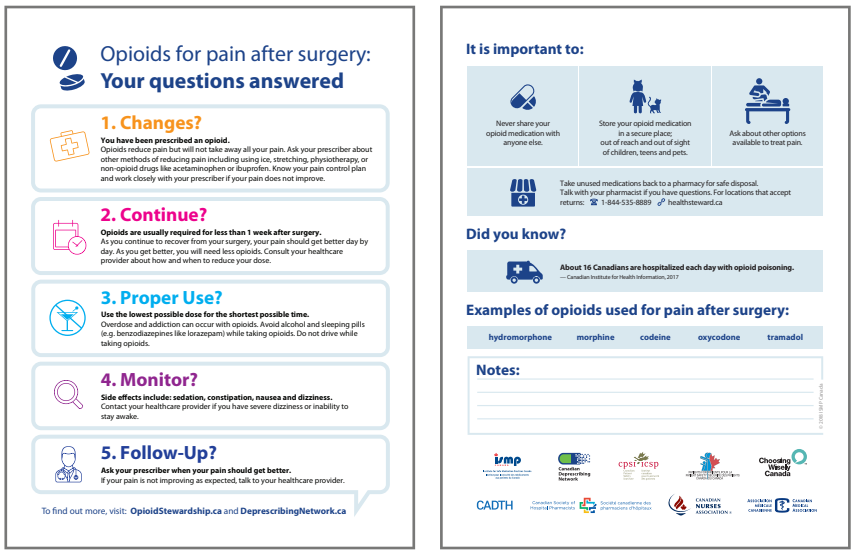
Healthcare providers can order complimentary resources from HPSA to promote safe disposal of medications to the public. The resources and order

* A symptom relief kit is a "standardized package of medications and related medical supplies provided to a patient who is approaching end-of-life for the purpose of relieving unanticipated or rapidly escalating symptoms" (Hospice Palliative Care Teams for Central LHIN, Toronto, ON; http://www.centralhealthline.ca/healthlibrary_docs/SymptomManagementKit.pdf).

Figure 1. Safe storage and disposal information card.

Download: English | French

Figure 2. Opioids for pain after surgery: your questions answered.



Download: English | French

form are available from: https://www.ismp-canada.org/opioid_stewardship/ (see Storage and Disposal tab).

Conclusion

To prevent medication-related harm, patients and family members should receive clear guidance about the appropriate storage of all medications, as well as the disposal of unnecessary ones. Patient and consumer organizations, hospitals, pharmacies, community care providers, and provincial and national organizations are all well positioned to integrate key messages into resources for and conversations with patients and their families. Contact info@ismpcanada.ca for additional information about knowledge dissemination and translation initiatives for these important patient safety messages.

References

1. 13 Canadians hospitalized each day for opioid poisoning. Ottawa (ON): Canadian Institute for Health Information; 2016 Nov 16 [cited 2018 May 17]. Available from: https://www.cihi.ca/en/13-canadians-hospitalized-each-day-for-opioid-poisoning
2. Denenberg R, Curtiss CP. Appropriate use of opioids in managing chronic pain. Am J Nurs. 2016;116(7):26-38.
3. Brands B, Paglia-Boak A, Sproule BA, Leslie K, Adlaf EM. Nonmedical use of opioid analgesics among Ontario students. Can Fam Physician. 2010;56(3):256-262.
4. White paper on the prevention of poisoning in children in Canada. Toronto (ON): Parachute; 2011 Oct [cited 2018 May 25]. Available from: http://www.parachutecanada.org/downloads/policy/WhitePaper_Poisoning.pdf
5. Poison prevention. Toronto (ON): Ontario Poison Centre; 2015 [cited 2018 May 17]. Available from: http://www.ontariopoisoncentre.ca/For-Families/poison-prevention/poison-prevention.aspx
6. Disposal of unused medicines: what you should know. Silver Spring (MD): US Food and Drug Administration; 2018 May 25 [cited 2018 Jun 9]. Available from: http://www.fda.gov/Drugs/ResourcesForYou/Consumers/BuyingUsingMedicineSafely/EnsuringSafeUseofMedicine/SafeDisposalofMedicines/ucm186187.htm
7. I don't flush campaign. Toronto (ON): Ontario Clean Water Agency and Clean Water Foundation; 2018 [cited 2018 Jun 9]. Available from: http://idontflush.ca/

8. Safeguarding Our Communities Act (Patch for Patch Return Policy), 2015, S.O. 2015, c. 33. [cited 2018 Jun 7]. Available from: https://www.ontario.ca/laws/statute/15s33
9. Patch-for-Patch Fentanyl Return Program: fact sheet. Toronto (ON): Ontario College of Pharmacists; 2016 [cited 2018 May 29]. Available from: http://www.ocpinfo.com/regulations-standards/policies-guidelines/Patch_For_Patch_Fentanyl_Return_Fact_Sheet/
10. Hyland B, Fan M, Hamilton M, Reding R, Trbovich P. Informing patients and families about storage and disposal of opioids [poster]. Canadian Society of Hospital Pharmacists Professional Practice Conference; 2018 Feb 4-6; Toronto (ON). Can J Hosp Pharm. 2018 Jan-Feb;71(1):61.
11. Prevent medication accidents [information card]. Toronto (ON): Institute for Safe Medication Practices Canada. [cited 2018 May 10]. Available from: https://www.ismp-canada.org/download/OpioidStewardship/storage-disposal-information.pdf
12. Opioids for pain after surgery: your questions answered [information card]. Toronto (ON): Institute for Safe Medication Practices Canada [cited 2018 Jun 7]. Available from: https://www.ismp-canada.org/download/OpioidStewardship/OpioidsAfterSurgery-EN.pdf

Safety Concerns Resulting from a Concentrated Potassium Chloride Shortage in the United States

NATIONAL ALERT NETWORK (NAN)

NANALERT 1

This alert is based on information from the National Medication Errors Reporting Program (MERP) operated by the Institute for Safe Medication Practices (ISMP).

May 24, 2018

Safe handling of concentrated electrolyte products from outsourcing facilities during critical drug shortages

Given the near total lack of availability of potassium chloride for injection concentrate in vials (2 mEq/mL), along with problems accessing the 250 mL pharmacy bulk package (2 mEq/mL), some healthcare providers have benefitted from outsourcing facilities that have compounded this product starting with the active pharmaceutical ingredient (API). However, outsourcing facilities are not subject to all of the same labeling requirements that are mandated for commercial manufacturers for potassium chloride injection concentrate or any pharmaceutical product. Occasionally, this has led to labeling or packaging that is unusual or unfamiliar to certain healthcare providers, which increases the risk of a serious medication error.

Recently, two examples have come to our attention. An outsourcing division of Nephron Pharmaceuticals provides compounded potassium chloride for injection concentrate in a syringe. The syringe is intended for pharmacy use only to further dilute for central or peripheral intravenous (IV) administration. However, one can envision ways these syringes could inadvertently reach patient care units and be mistaken as a medication intended for direct IV administration given its packaging in a syringe. Direct IV administration of potassium chloride for injection concentrate has proven fatal.

The other example involves potassium chloride for injection concentrate packaged in vials by Premier Pharmacy Labs, also an outsourcing facility. This drug is packaged in an amber glass vial with a black cap with the warning, "Must be diluted." However, the vial does not have a black ferrule with this statement, as required by USP General Chapter <7> of commercially available vials of potassium chloride for injection concentrate. Also, when the black cap is removed from the vial of the compounded potassium chloride for injection concentrate, it looks remarkably similar to the Premier Pharmacy Labs' vial of calcium chloride. Although the product labels include an NDC number and barcode, both amber vials have the same pattern of red and white on the labels along with plain aluminum ferrules (**Figure 1**), which could contribute to a dangerous mix-up.

Figure 1. Potassium chloride for injection concentrate vial (left) comes with a black cap, but once removed, it looks similar to calcium chloride vials (right). Premier Pharmacy Labs is investigating ways to reduce look-alike vial appearances. Although not visible here, an NDC number and barcode are printed elsewhere on the labels.

Other labeling and packaging problems have been reported with products compounded by outsourcing facilities. For example, the strength per mL is sometimes the most prominent expression on the principal display panel of an outsourcing facility's product label, rather than the strength per total volume (followed by the per mL amount in parentheses), as required by USP and the US Food and Drug Administration (FDA) for commercial manufacturers.

continued on page 2—NAN>

The National Alert Network (NAN) is a coalition of members of the National Coordinating Council for Medication Error Reporting and Prevention (NCCMERP). The network, in cooperation with the Institute for Safe Medication Practices (ISMP) and the American Society of Health-System Pharmacists (ASHP), distributes NAN alerts to warn healthcare providers of the risk for medication errors that have caused or may cause serious harm or death. NCCMERP, ISMP, and ASHP encourage the sharing and reporting of medication errors both nationally and locally, so that lessons learned can be used to increase the safety of the medication use system.

In the United States, a shortage of potassium chloride for injection concentrate in vials has led providers to purchase these and related products from outsourcing facilities. The National Alert Network (NAN) issued a recent alert that highlights 2 situations of concern resulting from this practice:

Availability of concentrated potassium chloride in a syringe. Although the product in question is intended for pharmacy use and further dilution, given the packaging, there is a risk of direct intravenous injection that may result in death.

Labelling standards not followed by outsourcing facilities. Outsourcing facilities are not required to adhere to the same labelling requirements as commercial manufacturers. This may lead to unexpected or unfamiliar labelling, potentially leading to a serious medication error.

This alert is a reminder to sustain safeguards that we have in place in Canada to prevent harm or death due to inadvertent injection of concentrated electrolytes. It also highlights the challenges with regulation and oversight of outsourcing facilities. To read the full alert, visit https://www.nccmerp.org/sites/default/files/nan_alert-05-24-18.pdf

Canada's National Incident Data Repository for Community Pharmacies

The Canadian Medication Incident Reporting and Prevention System (CMIRPS) is a collaborative pan-Canadian program designed to reduce and prevent harmful medication incidents in Canada. Reporting, sharing and learning from medication incidents helps to reduce their recurrence, mitigate patient harm and support a safer healthcare system. ISMP Canada, along with Health Canada, the Canadian Institute for Health Information (CIHI) and the Canadian Patient Safety Institute (CPSI) including Patients for Patient Safety Canada (PFPSC), are key partners in the CMIRPS program.

ISMP Canada established a national incident data repository for community pharmacies through its community pharmacy incident reporting program. Community pharmacies in several provinces are already contributing to this national repository for continuous quality improvement, and pharmacies in other provinces are considering participation in this effort as well. The repository is helping to create a more cohesive information-sharing system that will facilitate better understanding of medication incidents and the development of more robust strategies to prevent harm.

We look forward to continued collaboration with all stakeholders and building on the success of the reporting and prevention system for safer patient care. Find out how community pharmacies can contribute to this data repository and share learning from medication incidents by contacting info@ismpcanada.ca

This segment of the bulletin describes a recent SafeMedicationUse.ca publication from ISMP Canada's Consumer Program.

April 2018 - Newsletter:

Using Your Own Medications While in Hospital

SafeMedicationUse.ca

SafeMedicationUse.ca received a report about parents who brought an over-the-counter pain cream to the hospital to apply to their child's burns. The cream was applied to the burns during a dressing change. Unfortunately, the child's damaged skin allowed too much of the medication to be absorbed, and the child experienced a seizure.

The newsletter cautioned consumers and their caregivers about patients using their own medications while in hospital. It stressed the importance of patients not using any medications on their own without first speaking with a healthcare provider in the hospital, such as a doctor, nurse, or pharmacist.

Tips for Practitioners:

- Ensure that an organizational policy is in place to guide the handling of patients' own medications during the hospital stay, including an assessment of such medications as soon as possible after admission.
- Ask your patients and/or caregivers at every admission if they have brought any of their home medications to the hospital. Help them understand that they should not use any prescription, nonprescription, or natural health products without approval from a healthcare provider in the hospital.

Med Safety Exchange
Webinar Series

Wednesday, July 25, 2018

Join your colleagues across Canada for complimentary monthly 50 minute webinars to share, learn and discuss incident reports, trends and emerging issues in medication safety!

For more information, visit
www.ismp-canada.org/MedSafetyExchange/

CMIRPS SCDPIM
Canadian Medication Incident Reporting and Prevention System
Système canadien de déclaration et de prévention des incidents médicamenteux

The Canadian Medication Incident Reporting and Prevention System (CMIRPS) is a collaborative pan-Canadian program of Health Canada, the Canadian Institute for Health Information (CIHI), the Institute for Safe Medication Practices Canada (ISMP Canada) and the Canadian Patient Safety Institute (CPSI). The goal of CMIRPS is to reduce and prevent harmful medication incidents in Canada.

HIROC

The Healthcare Insurance Reciprocal of Canada (HIROC) provides support for the bulletin and is a member owned expert provider of professional and general liability coverage and risk management support.

ISMP CANADA

The Institute for Safe Medication Practices Canada (ISMP Canada) is an independent national not-for-profit organization committed to the advancement of medication safety in all healthcare settings. ISMP Canada's mandate includes analyzing medication incidents, making recommendations for the prevention of harmful medication incidents, and facilitating quality improvement initiatives.

Report Medication Incidents

(Including near misses)

Online: www.ismp-canada.org/err_index.htm
Phone: 1-866-544-7672

ISMP Canada strives to ensure confidentiality and security of information received, and respects the wishes of the reporter as to the level of detail to be included in publications. Medication Safety bulletins contribute to Global Patient Safety Alerts.

Stay Informed

To receive ISMP Canada Safety Bulletins and Newsletters visit:

www.ismp-canada.org/stayinformed/

This bulletin shares information about safe medication practices, is noncommercial, and is therefore exempt from Canadian anti-spam legislation.

Contact Us

Email: cmirps@ismpcanada.ca
Phone: 1-866-544-7672