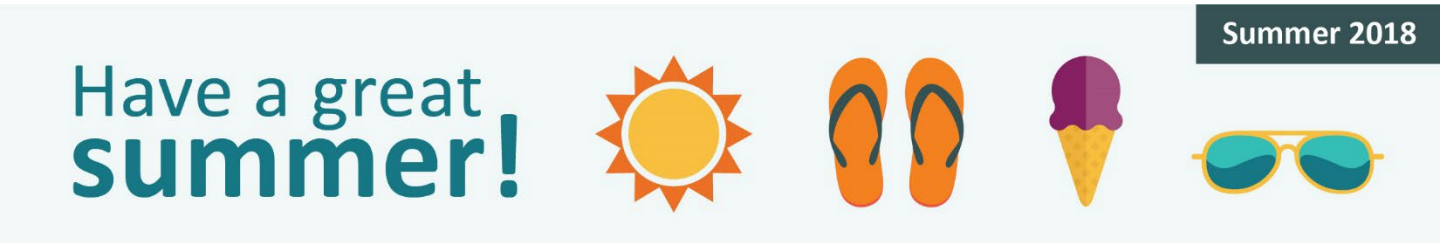


National System for Incident Reporting

NSIR

Canadian Institute for Health Information
Institut canadien d'information sur la santé

Collect. Analyze. Share. Learn.

Welcome to the quarterly National System for Incident Reporting (NSIR) electronic bulletin. This is where you can find information on medication and radiation treatment incident reporting and analysis for sharing and learning across Canada.

If you are having difficulty viewing this email, please see the attached PDF version.

Inside this issue

Highlights

Sharing and learning

Drug use and medication incidents among seniors in Canada

The Canadian Institute for Health Information (CIHI) recently released *Drug Use Among Seniors in Canada, 2016*. This report provides an in-depth look at the number and types of drugs prescribed to seniors in all Canadian provinces and Yukon, as well as to seniors with drug coverage through the First Nations and Inuit Health Branch. Where possible, the results are broken down by sex, age and, for the first time, neighbourhood income and geographic location (urban or rural/remote).

Higher risks associated with multiple drug use in seniors

The use of multiple drugs is associated with a higher rate of potentially inappropriate drug use and a higher risk of adverse drug events. Seniors are at a higher risk of adverse drug events due to age-related changes in the body and the higher number of drugs they often take, compared with younger populations. The use of multiple drugs also increases the rate of emergency department visits and hospitalizations.

The report found that nearly two-thirds (65.7%) of seniors were prescribed 5 or more different drug classes, with more than one-quarter (26.5%) being prescribed 10 or more different drug classes and 8.4% prescribed 15 or more drug classes.

On average, seniors use more drugs than any other age group, in large part due to their predisposition to a higher number of chronic conditions. Approximately one-third (35.3%) of seniors had chronic use of 5 or more different drug classes, while 1 in 18 seniors (5.5%) had chronic use of 10 or more different drug classes.

The report also identified other subpopulations that use a higher number of drugs and have more potentially inappropriate drug use: women, older seniors, and those living in low-income and rural/remote neighbourhoods.

Use of potentially inappropriate drugs among seniors: The Beers list

The report also examined potentially inappropriate drug use among seniors using the 2015 version of the Beers list, which was originally developed by Dr. Mark H. Beers in 1991.[1] The list identifies specific drugs that have the potential to increase the risk of adverse effects in seniors, such as falls, fractures and cognitive impairment. It also identifies potentially inappropriate drug classes, such as proton pump inhibitors (PPIs) and benzodiazepines.

The report found that in 2016, nearly half of seniors (49.4%) had at least one claim for a drug on the Beers list. Furthermore, 18% of seniors had claims for multiple drugs on the Beers list, including 8.1% who were chronic users of 2 or more different drugs.

Even so, use of drugs on the Beers list decreased from 50.2% of seniors in 2011 to 47.2% in 2016,[i] and chronic use of these drugs decreased from 33.9% to 31.1%. Similarly, the overall use of antipsychotics and benzodiazepines decreased from 33.9% of seniors in 2011 to 31.1% in 2016. However, the use of statins, the most commonly prescribed drug class, increased from 46.6% to 48.4%.

Unfortunately, the report also shows that seniors are still frequently prescribed lorazepam and oxazepam (benzodiazepines), zopiclone (a benzodiazepine-related drug) and quetiapine (an antipsychotic), and that these remain among the 10 most commonly prescribed chemicals on the Beers list.

Table 1 Top 10 chemicals from Beers list* prescribed to seniors, by rate of use and chronic use, Canada,† 2016

Chemical	Rate of use	Rate of chronic use
Pantoprazole (PPI) (>8 weeks)	13.2%	10.3%
Lorazepam	8.8%	3.6%
Nitrofurantoin	5.0%	0.1%
Rabeprazole (PPI) (>8 weeks)	4.3%	3.5%
Amitriptyline	2.9%	1.8%
Quetiapine	2.8%	1.7%
Omeprazole (PPI) (>8 weeks)	2.7%	2.2%
Zopiclone	2.4%	1.5%
Oxazepam	2.4%	1.4%
Estradiol (oral/topical patch)	2.1%	1.2%

Notes

* AGS Beers Criteria 2015 Updated Version, with modifications to make the measure of potentially inappropriate use more applicable to the Canadian market (see Appendix B in CIHI's report *Drug Use Among Seniors in Canada, 2016*).

† The Northwest Territories and Nunavut do not currently submit data to NPDUIS.

Sources

National Prescription Drug Utilization Information System, Canadian Institute for Health Information; Banque médicaments, Régie de l'assurance maladie du Québec.

i. Quebec was excluded because claims data is not available in CIHI's National Prescription Drug Utilization Information System (NPDUIS) prior to 2014.

Patient safety issues for seniors: NSIR medication incidents

CIHI's report highlights the complex and evolving issues involved when prescribing drugs to seniors in Canada. These issues are also apparent when examining the medication incidents reported to NSIR from participating health care facilities, including long-term care homes.

Seniors are involved in more medication incidents reported to NSIR than any other age group. More than half of all medication incidents in NSIR involve seniors.[ii]

NSIR data also shows potentially inappropriate drug use in seniors — 1,170 incidents involved seniors and at least 1 of the top 10 of the most commonly prescribed chemicals on the Beers list.

Of those incidents, 713 (61%) specifically involved lorazepam, oxazepam, zopiclone or quetiapine. These incidents are often the result of an omitted dose, extra dose or wrong quantity medication event.

Omitted doses are the most common type of medication incident reported to NSIR (26%). As shown in the table below, omitted dose errors are more prevalent in incidents involving seniors (29%) and, more specifically, incidents also involving the 4 drug products listed above (29%). Depending on the indication for, dose of and frequency of the drug product, an omitted dose may cause patient harm, while in other instances, the omission of a potentially inappropriate drug product for this population may prevent harm to the patient.

In addition, the impact of extra doses could be compounded when the drug product is also potentially inappropriate for use with seniors. These types of errors are more common among incidents involving seniors who are prescribed lorazepam, oxazepam, zopiclone and/or quetiapine (12%).

Table 2 Common problem types

Problem	Non-seniors (all incidents)	Seniors (all incidents)	Seniors (incidents involving lorazepam, oxazepam, zopiclone or quetiapine)
Omitted dose	22%	29%	29%
Wrong quantity	17%	14%	18%
Extra dose	8%	9%	12%

ii. Month and Year of Birth are optional data elements. 70% of the approximately 52,000 reported incidents in NSIR included this information in the incident details and were used in this analysis. A patient's age is calculated from the Month and Year of Birth and the date when the incident was detected. Seniors are defined as patients age 65 and older.

Case scenario

Extra dose

A 72-year-old female was newly admitted to a long-term care facility. At bedtime (22:00), she was administered zopiclone 7.5 mg. At 23:30, she was given lorazepam 1 mg SL because she was struggling to sleep.

At 00:10, another dose of zopiclone 7.5 mg was given in error.

The resident became agitated and confused, complained of being light-headed and vomited several times.

Vital signs were monitored more closely for several hours.

The incident occurred when new staff failed to check the medication administration record prior to administering the second dose. Additionally, the staff member was not familiar with zopiclone, including the adverse effects it may have on seniors.

This incident resulted mild harm to the resident.

The supervising nurse requested a review of the resident's prescriptions. The physician discontinued zopiclone and, recognizing that lorazepam is on the Beers list, ordered that it be used only as needed at bedtime. Other sleep strategies such as soft music or white noise are to be tried first to help the resident get to sleep.

The need to reduce the number of drugs prescribed to seniors, especially potentially inappropriate drugs, is a growing concern.

When addressing medication incidents among seniors, preventive strategies may choose to target specific drug products (e.g., benzodiazepines) that tend to result in common problem types (e.g., extra dose).

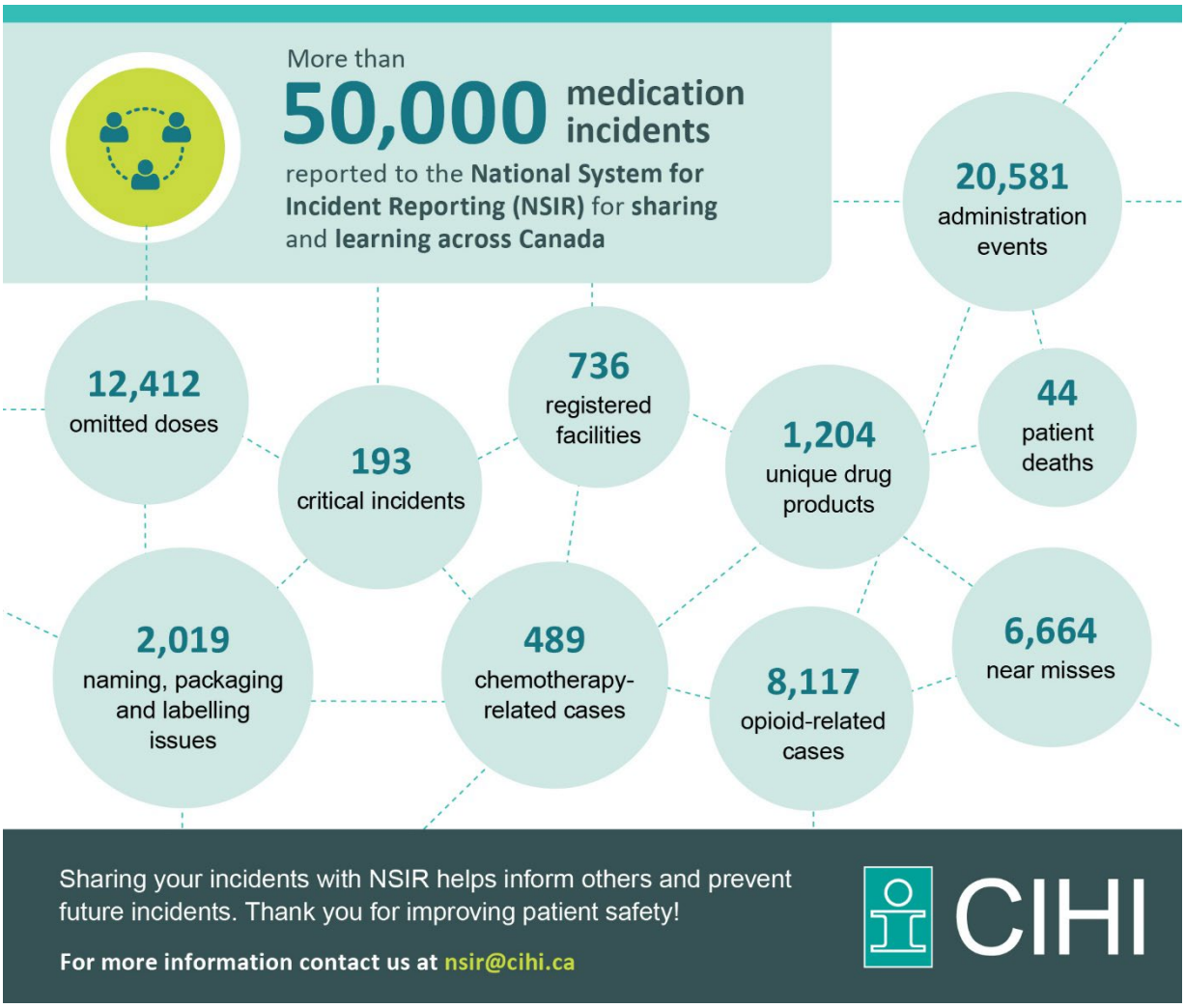
When reporting these incidents to your facility and NSIR, please remember to include as many details about the demographics of the patient and his or her condition as possible to help other users who may encounter similar cases. And remember to share any recommendations that have worked in your facility.

These resources provide additional information on seniors and drugs:

- *Drug Use Among Seniors in Canada, 2016*, CIHI
- Safer medication use in older persons information page, ISMP Canada
- Deprescribing guidelines, Canadian Deprescribing Network
- Pharmacists, doctors warning seniors about risk of long-term use of sleeping pills, Choosing Wisely Canada

50,000 medication incidents and counting

Over the last 14 years, CIHI has collaborated with CMIRPS[iii] partners (Health Canada, ISMP Canada[iv] and the Canadian Patient Safety Institute) to help create safer health care systems in Canada. Part of this collaboration was the creation of NSIR for medication incident reporting — since the official launch 8 years ago, NSIR has collected more than 50,000 medication incidents for sharing and learning. Through participation in NSIR, some of Canada's most highly regarded organizations have shown their commitment to patient safety and to enhancing the safety of the medication system.



ISMP Canada's recent alerts and safety bulletins

- Safe Storage and Disposal of Medications
- Reaffirming the "Do Not Use: Dangerous Abbreviations, Symbols and Dose Designations" List
- Deprescribing: Managing Medications to Reduce Polypharmacy

iii. Canadian Medication Incident Reporting and Prevention System.
iv. Institute for Safe Medication Practices Canada.

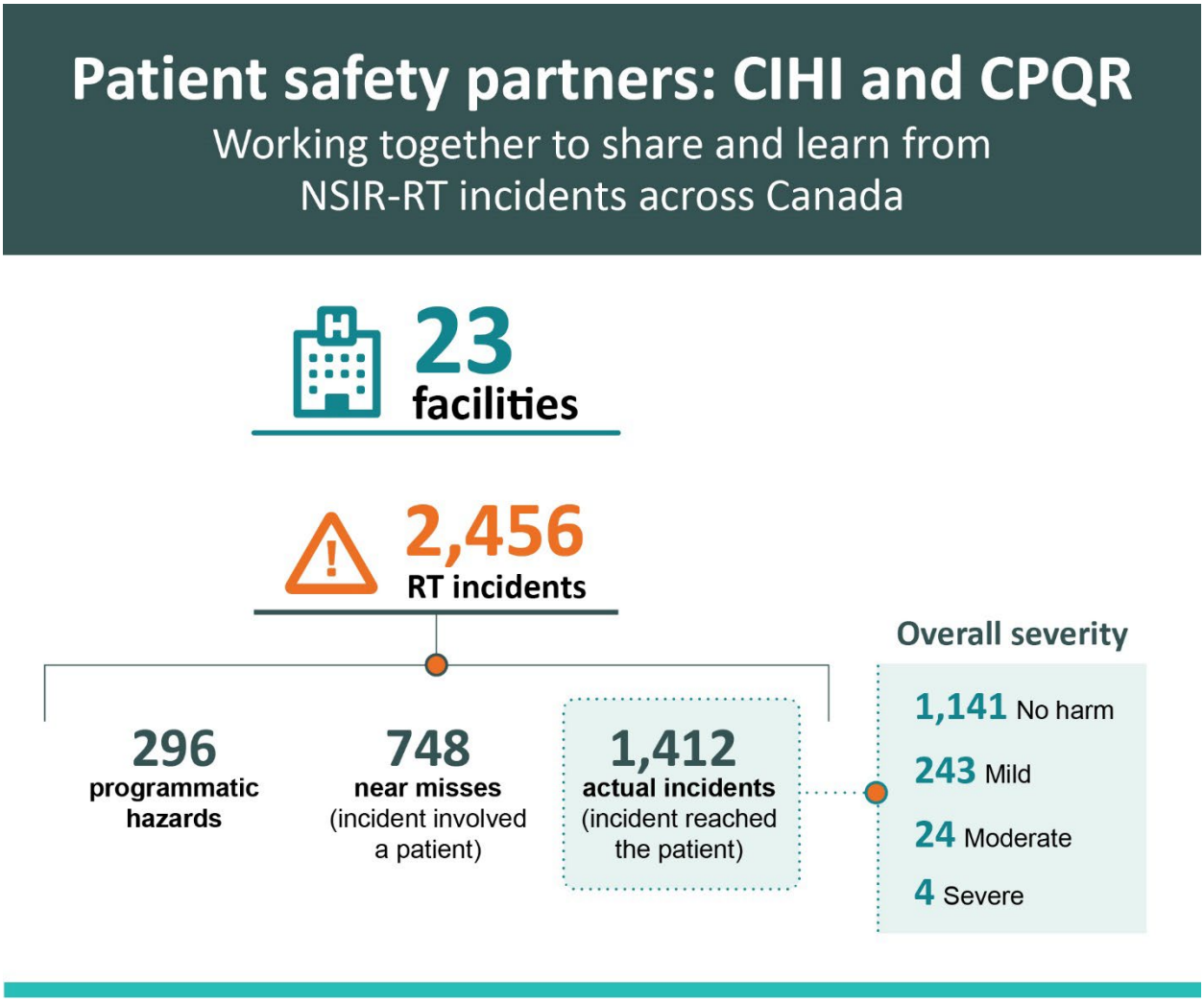
NSIR-RT

NSIR-RT Bulletin now available!

The Canadian Partnership for Quality Radiotherapy (CPQR) has released the first edition of the National System for Incident Reporting — Radiation Treatment (NSIR-RT) Bulletin.

This new quarterly bulletin supports continuous learning from NSIR-RT incident data through the presentation of data trends and case studies. It also provides system users with information on program developments and enhancements.

Read the inaugural bulletin, and add yourself to the CPQR bulletin mailing list to receive future editions in your inbox!



If you are interested in participating in NSIR, email us at nsir@cihi.ca.

Other CIHI news

Opioid harms on the rise

Opioid-related harms are rising despite declines in both the number of prescriptions for opioids and the total amount dispensed from Canadian pharmacies.

On June 19, 2018, CIHI — in partnership with Health Canada and the Public Health Agency of Canada — released *Pan-Canadian Trends in the Prescribing of Opioids and Benzodiazepines, 2012 to 2017* and *Preliminary rates of harm due to opioid poisoning, by province/territory, 2017*.

Preliminary data from Canadian hospitals showed that an average of 17 Canadians were hospitalized for opioid poisonings each day in 2017, an increase from 16 each day in 2016. This was despite the fact that the amount of opioids prescribed per capita declined by 10% during that same period.

You can find out more by visiting CIHI's Opioids in Canada web page. To stay informed of future opioid-related work, subscribe to CIHI's quarterly Substance Use Surveillance eNewsletter.

Additional information

Conferences of interest

Quality Improvement and Patient Safety Forum (QIPSF)
October 16, 2018
Learn from and share experiences with others facing similar challenges at the QIPSF in Toronto. This annual conference is for those passionate about quality improvement and patient safety.

Canadian Patient Safety Week (CPSW)
October 29 to November 2, 2018
CPSW is a national, annual campaign that started in 2005 to inspire extraordinary improvement in patient safety and quality. This year's focus is medication safety, with the goal of reducing medication errors across Canada.

Contact us

Thank you for taking the time to read the NSIR eBulletin. Unless otherwise stated, the reported NSIR findings are based on the voluntary reporting of incidents at participating health care facilities across Canada. If there is anything you would like to see featured in an upcoming edition, please contact us at nsir@cihi.ca.

The NSIR eBulletin is distributed on a quarterly basis. Previous editions can be found on the NSIR web page.

Appendix: Text alternatives for images

50,000 medication incidents and counting

More than 50,000 medication incidents have been reported to the National System for Incident Reporting (NSIR) for sharing and learning across Canada. The 50,000 medication incidents include 12,412 omitted doses, 2,019 naming, packaging and labelling issues, 193 critical incidents, 489 chemotherapy-related cases, 736 registered facilities, 1,204 unique drug products, 8,117 opioid-related cases, 6,664 near misses, 44 patient deaths and 20,581 administration events. Sharing your incidents with NSIR helps inform others and prevent future incidents. Thank you for improving patient safety. For more information contact us at nsir@cihi.ca.

NSIR-RT

CIHI and CPQR are partners in patient safety, working together to share and learn from NSIR-RT incidents across Canada. 23 participating facilities have submitted 2,456 RT incidents. Of these submitted incidents, 296 were programmatic hazards, 748 were near misses where the incident involved a patient, and 1,412 were actual incidents that reached the patient. Of the 1,412 incidents that reached the patient, 1,141 did not cause harm, 243 caused mild harm, 24 caused moderate harm and 4 caused severe harm.

Reference

1. American Geriatrics Society 2015 Beers Criteria Update Expert Panel. American Geriatrics Society 2015 updated Beers criteria for potentially inappropriate use in older adults. *Journal of the American Geriatrics Society*. 2015.