

ISMP Canada Safety Bulletin

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Sink or Swim?

Helping Patients and Practitioners to Understand Opioid Potencies and Overdose Risk

When prescribing opioids, practitioners are challenged with recognizing their patients' exposure to risks and balancing these risks with improvements in pain control and functional ability. Although opioids are often classified as a single group, individual agents differ in relative analgesic potency, as well as the potential risk of harm to patients. Furthermore, the availability of numerous opioid formulations, each with distinct physical and pharmacological characteristics (e.g., immediate-release oral dosage forms, long-acting oral dosage forms, topical patches, formulations for injection), adds to the difficulty of assessing potential harm.¹

Even when the benefits and risks have been identified, practitioners may struggle with how to share this information in a meaningful manner with their patients. Few resources exist to engage and educate patients about the relative potency of their

opioid therapy and the associated risks of harm. This identified gap led to the development of a communication and risk assessment tool specific to opioids. The tool, which is designed in the form of an infographic, is directed specifically to patients and their healthcare practitioners.

Morphine Milligram Equivalents

Morphine is used as the standard for comparing the analgesic potencies of different opioids. Healthcare practitioners can determine daily opioid consumption by first converting a patient's opioid dose to morphine milligram equivalents (MME*) and then calculating the total daily intake, expressed as morphine milligram equivalents per day (MME/D†). A higher MME/D value is associated with a greater risk of overdose and increased complications from opioid therapy.

NAVIGATING OPIOIDS FOR CHRONIC PAIN

The opioid infographic – [Navigating Opioids for Chronic Pain](#) (see page 3) is intended to help prescribers, pharmacists, patients, and their caregivers to understand the concept of morphine equivalence, the increased risk of harm at higher levels of morphine milligram equivalents per day (MME/D), and where in the risk profile a specific opioid regimen exists.

* MME has sometimes been referred to as MEq (morphine equivalents).

† MME/D has sometimes been termed MED (morphine equivalents daily), or morphine daily dose (MDD).

However, the calculation of MME is not always straightforward. Although there is general agreement among equianalgesic dosing tables, there are some conversion-factor differences between tables from different resources (e.g., the US Centers for Disease Control and Prevention guideline² and the 2010 Canadian guideline¹). The direction of conversion (e.g., morphine to oxycodone versus oxycodone to morphine) and the calculation of dose equivalency when changing the route of administration (e.g., oral to topical) can also be problematic. Discrepancies can lead to differences in the assessment of risk, possibly resulting in unsafe changes to pain management strategies.

Use of the Opioid Infographic

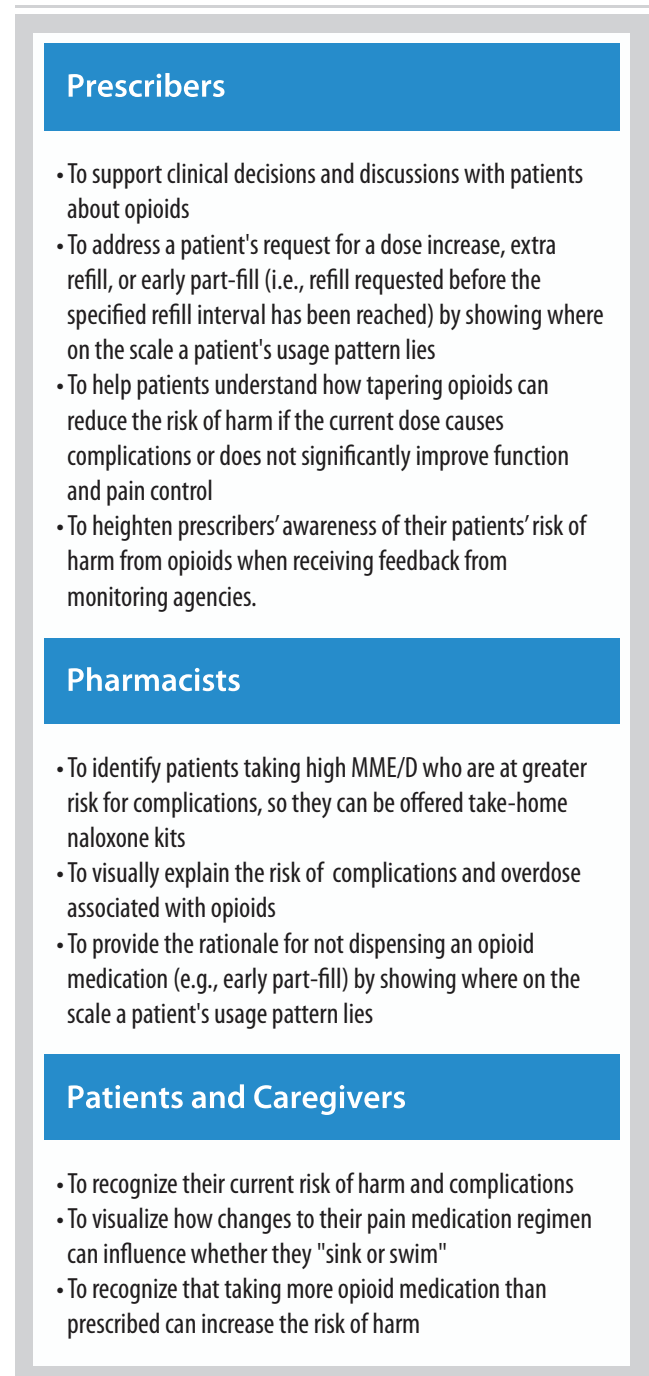
The 2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain³ strongly recommends a prescribed dose less than 90 MME/D. For individuals already on a higher dose of opioid, the guideline recommends a taper to the lowest effective dose. The threshold dose of 90 MME/D is much lower than that published in the previous Canadian guideline, which recommended a “watchful dose” of 200 MME/D.¹ This new daily dose limit also aligns with the recommendation in the 2016 guideline from the US Centers for Disease Control and Prevention.²

The 2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain strongly recommends limiting the prescribed opioid dose to less than 90 morphine milligram equivalents per day (MME/D).

Healthcare practitioners, patients, and caregivers can use the infographic to confirm and reinforce their own understanding of opioid morphine equivalencies, with respect to both analgesic potency and risk of harm. Together, they can use the infographic to determine where on the morphine equivalency scale

an individual’s opioid regimen lies, to guide monitoring as well as therapy decisions. Figure 1 outlines the suggested use of the infographic by stakeholders.

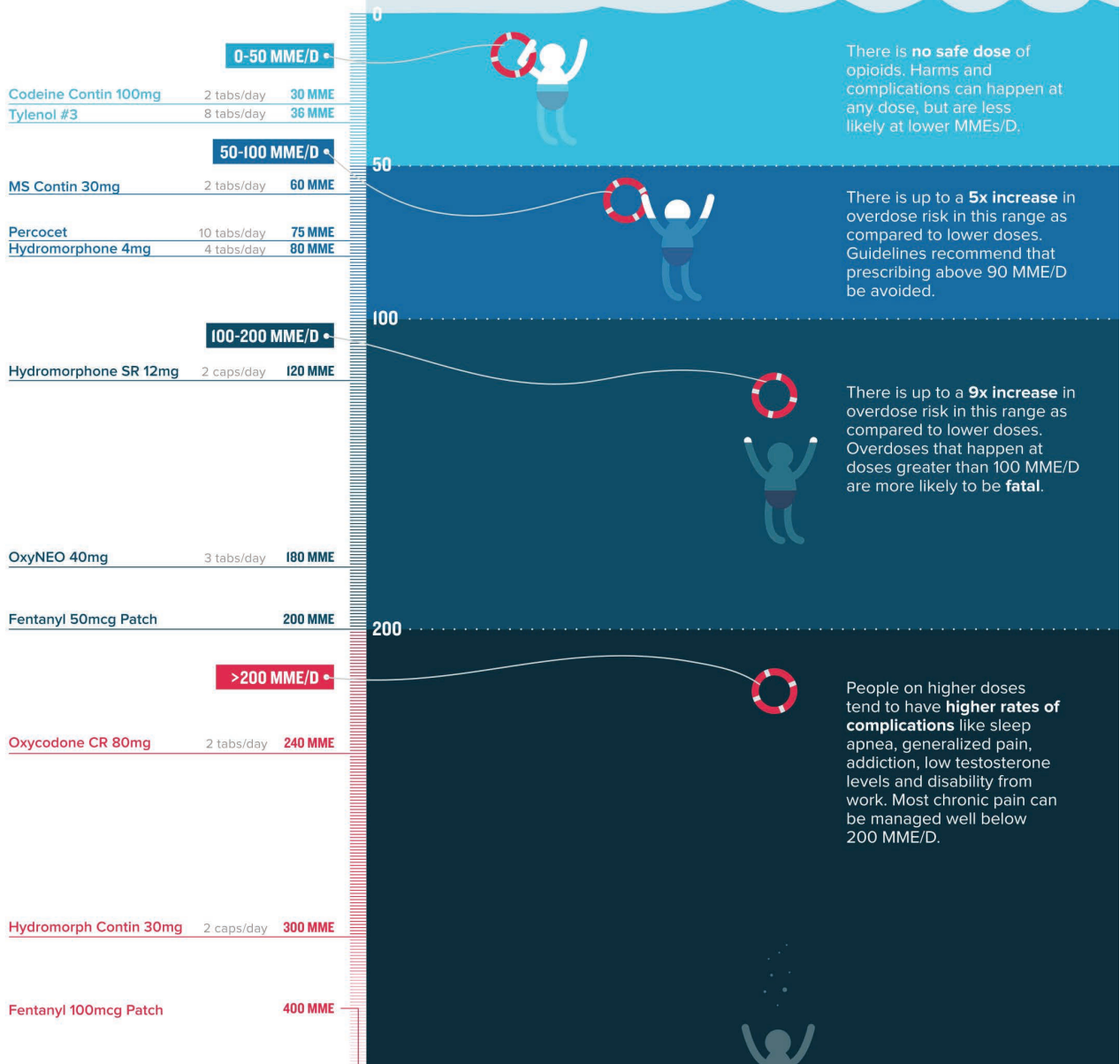
Figure 1. Use of the opioid infographic. MME/D = morphine milligram equivalents per day.



NAVIGATING OPIOIDS FOR CHRONIC PAIN

Sometimes the best of intentions lead to devastating consequences. Canada and the U.S. are the two highest consumers of prescription opioids even though we don't have good evidence that they are effective for chronic pain. Since there are many different opioids used for the same purpose, we use **morphine equivalence** to compare how strong they are.

AS THE NUMBER OF MORPHINE MILLIGRAM EQUIVALENTS PER DAY (MME/D) INCREASES, THE HARMS ASSOCIATED WITH OPIOID THERAPY ALSO INCREASE.



The opioid infographic resulted from collaboration between several organizations, including the [University of Toronto Faculty of Medicine](#) and [Physicians for Responsible Opioid Prescribing](#). It aims to convey an individual's risk for opioid-related harm in a visual and meaningful way. Practitioners caring for patients who are taking opioids can use the infographic to assess the risk associated with patients' pain medication regimens and to more easily convey various safety concepts.

There is no safe dose [of opioid]. Harms and complications can happen at any dose, but are less likely at lower MME/D.

Acknowledgements

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References

1. Canadian guideline for safe and effective use of opioids for chronic non-cancer pain. Part B: Recommendations for practice. Hamilton (ON): National Opioid Use Guideline Group; 2010 Apr 30 [cited 2017 Jun 16]. Available from: http://nationalpaincentre.mcmaster.ca/documents/opioid_guideline_part_b_v5_6.pdf
2. Dowell D, Haegerich TM, Chou R. CDC guideline for prescribing opioids for chronic pain—United States, 2016. *JAMA*. 2016;315(15):1624-1645. Also available from: <https://www.cdc.gov/mmwr/volumes/65/rr/rr6501e1.htm>
3. Busse J. The 2017 Canadian guideline for opioids for chronic non-cancer pain. Hamilton (ON): National Pain Center; 2017 [cited 2017 Jun 16]. Available from: http://nationalpaincentre.mcmaster.ca/documents/Opioid%20GL%20for%20CAJ_01may2017.pdf



**Med Safety Exchange
Webinar Series**

Med Safety Exchange Webinar Series

Wednesday, October 18, 2017

Join your colleagues across Canada for complimentary monthly 60 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/

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

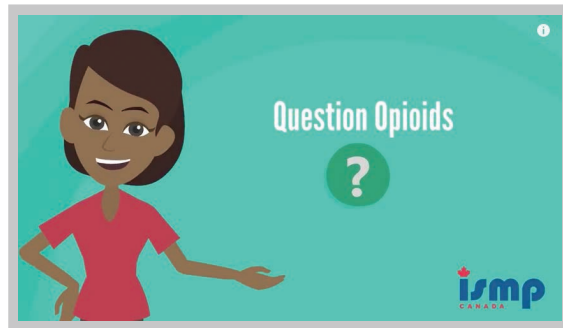
July 2017 SafeMedicationUse.ca Newsletter:

Question Opioids – Be an Informed Consumer

Opioids can cause serious harm or death if not taken correctly. A series of 8 short videos called [Question Opioids*](https://bit.ly/ismpcanada_question_opioids) (https://bit.ly/ismpcanada_question_opioids) is now available to help patients learn more about opioids *before* a discussion with their healthcare provider.

The videos cover the following topics:

- The Opioid Crisis
- Introducing Opioids
- Pain Treatment Options
- Using Opioids Safely
- Dependence and Tolerance
- Safe Storage and Disposal
- Addiction
- Protecting Yourself and Others



Tips for Practitioners:

- To support the judicious use of opioids and to prevent or reverse their associated harm, implement recommendations from the ISMP Canada Safety Bulletin published in November 2016 ([Safer Decisions Save Lives: Key Opioid Prescribing Messages for Community Practitioners](#)) and the 2017 Canadian Guideline for Opioids for Chronic Non-Cancer Pain.
- For any patients who are considering an opioid trial, share with them the [Question Opioids](#) videos to support patient engagement and education.
- Endorse the [5 Questions to Ask about Your Medications](#). Customized posters are available for your workplace; contact: medrec@ismc-canada.org

** ISMP Canada is grateful to the Best Medicines Coalition and Patients for Patient Safety Canada for reviewing these videos before release.*



**Consumers Can Help Prevent
Harmful Medication Incidents**

SafeMedicationUse.ca



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.



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.



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.

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

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