

Methadone Medication Incidents in Community Pharmacy

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Objectives

- In a community setting, methadone medication incidents can occur during prescribing, order entry, dispensing, administration, and/or monitoring.
- Medication incident reporting can be used to gain a better understanding of contributing factors or potential causes leading to methadone-related events.
- This study shares information about medication incidents involving methadone voluntarily reported to the ISMP Canada's Community Pharmacy Incident Reporting (CPhIR) Program (www.cphir.ca) and highlights the common themes identified through a multi-incident analysis.
- Specific examples of reported incidents are provided to develop system-based improvements that can be customized to pharmacy practice setting.

Methods

- Reports of medication incidents involving "Methadone" and/or "Metadol®" were extracted from the CPhIR Program between April 2010 and August 2012.
- 72 incidents met inclusion criteria and were included in this qualitative, multi-incident analysis.
- The incidents were reviewed independently by two ISMP Canada analysts.

Results

- The majority of the incidents were related to oral methadone used for opioid addiction, that is, the methadone maintenance treatment (MMT) program.
- The 72 medication incidents were categorized into two main themes (Table 1):
 - Characteristics unique to methadone; and
 - Medication-use process.
- The two main themes were further divided into subthemes of contributing factors (Table 2 and Table 3).

TABLE 1. Main Themes and Subthemes from the Multi-Incident Analysis

Characteristics Unique to Methadone	Medication-Use Process
Compounding	Prescribing
Confirmation Bias	Order Entry
	Dispensing
	Administration

TABLE 2. Theme 1 – Medication Incidents with Characteristics Unique to Methadone

Subtheme	Incident Examples
Compounding	<p>A pharmacist was filling a methadone prescription with environmental distractions (e.g. noisy, interruptions from staff members, and multiple prescriptions being processed at the same time). The pharmacist prepared a methadone dose by measuring 8 mL instead of 0.8 mL. The patient was given the witnessed dose and left the pharmacy. The pharmacist contacted the patient after the mistake was discovered. The patient was instructed to go to the emergency room if changes in cognition or breathing were noticed. The pharmacist monitored the patient by phone for 4 hours.</p> <p>Possible Contributing Factors</p> <ul style="list-style-type: none"> Dosing communicated through volume (mL) instead of dose (mg) Using inconsistent workflow to dispense methadone Environmental distractions Lack of independent double checks
Confirmation Bias	<p>Patient is on decreasing [or tapering] dose of methadone. [Pharmacist assumed the patient's methadone dose was the same as the previous encounter.] The pharmacist made up a dose of methadone based on the previous dose. [This led to the patient receiving a higher than anticipated methadone dose.][However,] both the patient and prescriber are fine with decreasing the dose for the next scheduled dose.</p> <p>Possible Contributing Factors</p> <ul style="list-style-type: none"> Highly individualized dosing associated with methadone treatments Lack of communication between healthcare professionals within the circle of care

TABLE 3. Theme 2 – Medication Incidents Related to Medication-Use Process

Subtheme	Incident Examples
Prescribing	<p>Physician wrote 3 different strengths for one patient. [It was unclear as to what the actual strength was [for the patient].</p> <p>Possible Contributing Factor</p> <ul style="list-style-type: none"> Unclear directions written on the prescription
Order Entry	<p>Student looked at a previous prescription when preparing maintenance methadone. Prepared as previous dose of 112 mg, current dose is 116 mg. Error discovered when pharmacist was labeling for dispensing. When we looked at patient's drug file, the previous dose had not been discontinued.</p> <p>Possible Contributing Factor</p> <ul style="list-style-type: none"> Copying previous prescriptions
Dispensing	<p>[Pharmacy] should have [filled] 3 bottles [for the patient]. Only one [bottle was] put through. Patient [was] allowed different [number] of bottles on various days [prior to discovering incident]. [Note: The incident reporter did not describe the exact order entry and/or dispensing process that led to this patient having different number of carries on different days.]</p> <p>Possible Contributing Factors</p> <ul style="list-style-type: none"> Dispensing MMT orders with regular prescriptions Pre-pouring witnessed MMT doses Unnecessary storage of pre-poured MMT doses
Administration	<p>[The] pharmacist poured orange juice in [the] cup [without methadone]. Patient was dispensed 100 mL of orange juice only. [The] pharmacist noticed within 5 minutes after [the patient] left and called the methadone clinic immediately. Methadone nurse said he would call [the patient] and if he could not get [a hold of the patient] by phone, [he] would go and get [the patient] at his apartment. [The methadone nurse] tried and could not contact [the patient]. [The patient] showed up the next day and was told that he had no methadone the day before. [The patient] did not notice any symptoms.</p> <p>Possible Contributing Factors</p> <ul style="list-style-type: none"> Inability to estimate approximate MMT dose based on physical appearance Lack of verification process to confirm previous MMT dose with patient and prescriber Multiple stock solutions with different concentrations

The authors would like to acknowledge the support from the Ontario Ministry of Health and Long-Term Care for the development of the CPhIR program. CPhIR contributes to the Canadian Medication Incident Reporting and Prevention System (CMIRPS) (www.ismp-canada.org/cmirms/).

Conclusions

- Learning from medication incidents is a fundamental step to medication system improvement.
- The results of this multi-incident analysis are intended to educate health care professionals about the vulnerabilities within our healthcare system.
- Preventing methadone-related medication incidents requires a strong relationship between the prescriber, the pharmacist, and the patient. The ideal model for MMT is one which allows the 3-way integration of patient, pharmacist, and physician within the community to ensure availability and accessibility of MMT for patients requiring such care. Patients are often the liaison between prescribers and pharmacists. If possible, patients should be included in the discussions to facilitate communication of methadone dose changes or therapy adjustments.

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