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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

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Delayed Treatment after Transitions of Care: A Multi-Incident Analysis

A multi-incident analysis of delayed medication doses after transitions of care identified the following themes:

- *Failure of manual medication-ordering processes*
- *Inadequate follow-up of problematic orders*
- *Incomplete handoffs between care providers*
- *Gaps in quality of medication reconciliation*

Transition of care is a term describing the movement of patients between healthcare locations, providers, or different levels of care within the same location, as their conditions or care needs change.[1] Previous studies have shown that when a patient is transferred between a hospital and the community or a long-term care facility, the first doses of medication to be administered after the transition may be delayed.[2-4] A multi-incident analysis of medication incidents was conducted to identify factors contributing to delayed treatment (i.e., delayed doses after transitions of care) and to suggest strategies to prevent or minimize the potential harm of such delays.

Methodology

Reports of medication incidents were extracted from voluntary reports* submitted to 2 ISMP Canada incident reporting databases (Individual Practitioner Reporting and Community Pharmacy Incident Reporting) and the National System for Incident Reporting† (NSIR), between database inception (August 2000, April 2010, and April 2009, respectively) and May 17, 2016.

Key terms used to search the databases were "delayed dose", "missed dose", and "dose omission". Of the 5022 incidents identified from the ISMP Canada databases, 134 mentioned a transition of care in the description and had sufficient details for inclusion in the final analysis. Application of the same process for NSIR data produced 2219 incidents, of which 203 met the criteria for inclusion. The analyses were conducted according to the methodology for multi-incident analysis outlined in the Canadian Incident Analysis Framework.[5]

Quantitative Findings

Although the majority of incidents from the ISMP Canada databases resulted in no harm, about 10% were reported to have caused harm to the patient (Table 1). The percentage of reported harm outcomes for the NSIR data was 15% (Table 2).

Findings of the Qualitative Analysis

Analysis of the incidents from the ISMP Canada databases identified 4 main themes and associated

* It is recognized that it is not possible to infer or project the probability of incidents on the basis of a voluntary reporting system.
† The NSIR, provided by the Canadian Institute for Health Information, is a component of the Canadian Medication Incident Reporting and Prevention System (CMIRPS) program. More information about the NSIR is available from: http://www.cmirps-scdpim.ca/?p=12

Table 1. Reported Severity of Outcomes of Incidents from the ISMP Canada Medication Incident Databases

Reported Severity	No. of Incidents
No error	2
No harm	117
Harm	14
Death	0
Unknown	1
Total	**134**

Table 2. Reported Severity of Outcomes of Incidents from the National System for Incident Reporting (NSIR)

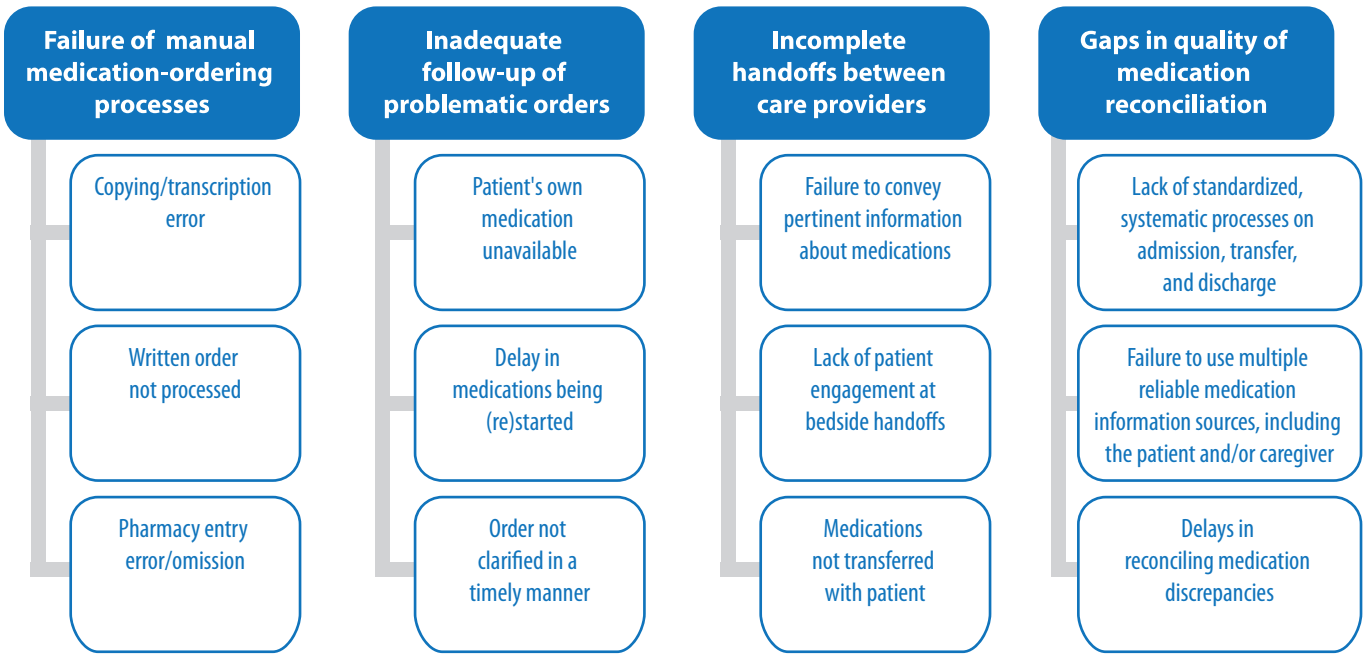
Reported Severity	No. of Incidents
No adverse outcome categories: reportable circumstance, near miss, none	159
Adverse outcome categories: mild, moderate, severe, death	29
Total	**188**

subthemes (Figure 1). Illustrative cases are shared to highlight each of the main themes. Analysis of the NSIR dataset supported the ISMP Canada database themes identified.

Theme: Failure of Manual Medication-Ordering Processes

Forty-three percent of the medication incidents had contributing factors related to missteps in paper-based (manual) transcription and order entry processes. Incomplete transcription of medication orders to the medication administration record (MAR), omissions and errors during pharmacy order entry, and delays in tracking down or processing paper orders were all evident. In many incidents, prescribers' handwritten orders were not processed in a timely manner. In other incidents, the form used for the admission BPMH was not integrated with the prescriber's order process, which led to omission errors. Electronic order entry and electronic MAR processes can aid in preventing these types of errors.

Figure 1. Main themes and subthemes from the qualitative analysis



Incident Example

A patient who had been admitted with gastrointestinal bleeding was discharged from hospital back to a retirement home. After reviewing the discharge prescriptions, the receiving physician manually wrote orders on the home's medication order sheet. Two weeks later, when the home's consulting pharmacist compared the hospital discharge list with the patient's current medication list, it was discovered that pantoprazole, the medication prescribed to prevent recurrences, was missing from the home's medication order sheet.

Community pharmacies that provide consulting services to long-term care facilities and retirement homes should ensure that there is a standardized, robust, and timely double-check process in place for all new medication orders. A double-check process is especially important if the medication-use system includes a manual step, such as manual copying of medication orders. Otherwise, delays in detecting inadvertent transcription errors or errors related to legibility can lead to medication omission or administration of incorrect medications.

Theme: Inadequate Follow-up of Problematic Orders

Problematic orders are those that require additional research to enable timely administration of a medication. They encompass orders requiring clarification of instructions, such as when to resume medications after surgery, and those requiring confirmation of a patient's own medication to be used in the hospital. Communication breakdown was evident as a contributing factor in many of the incidents reviewed.

Incident Example

The orders for a patient admitted to hospital included directions that tacrolimus and sirolimus, 2 anti-rejection medications prescribed after organ transplant, were to be continued "as at home". The day after admission, a pharmacy note was placed in the chart, stating that the patient was to use the home supply of these medications. However, the patient did not have the medications in hospital and consequently missed treatment for two days.

Theme: Incomplete Handoffs Between Care Providers

The process by which one healthcare provider transfers responsibility for a patient's care to another care provider is often referred to as a "handoff". A handoff involves communicating essential patient-specific information, including medication-related information, to the next care provider. Information about the patient's current medications should identify new orders and any outstanding doses to be administered immediately after the handoff, as well as medications that require monitoring or follow-up. This handoff is critical for a safe transition, and standardized tools should be developed and used.[6] Creating opportunities for the patient and/or family caregiver to be involved when communicating medication-related information and when planning treatment can increase patient safety; this involvement forms a key element within handoff of care processes.[6,7]

For the hospital setting, the analysis identified several factors that contributed to delayed administration of doses after transitions of care, including the lack of standardized transfer protocols and incomplete documentation in the MAR. Delay of first doses was particularly noticeable for patients transferring from the emergency department (ED). Such delays occurred when ordered medications were not administered before a patient's transfer out of the ED, when medications that had been dispensed but not administered did not accompany the patient upon transfer to another care unit, and when medication-related information was not discussed with the next care provider.

Medication dose delays also occurred when patients were discharged from hospital with ensuing gaps in home care services, as illustrated by the example below.

Incident Example

A patient with diabetes mellitus was discharged from hospital, and instructions were given to the home care provider that the patient required a daily reminder to take insulin. The first contact from a support worker was made 3 days after the

discharge. At that time, the patient reported an extremely high blood glucose reading. Further investigation showed that the requirement to contact the patient daily had not been communicated to the support worker; as a result, the patient forgot to administer his insulin.

Standardized processes should be in place to ensure that patients receive appropriate follow-up after a transition in care, especially if they are returning home on high-alert medications. Strategies to promote safety include involving the patient and caregiver(s) in these processes, providing written instructions on symptoms that require attention, and supplying a list of key contacts once the patient is at home. These approaches are highlighted in the Hospital to Home: Facilitating Medication Safety at Transitions Toolkit and Checklist.

Theme: Gaps in Quality of Medication Reconciliation

In Canada, published studies from the acute care environment have shown that unintentional medication discrepancies or potential errors are experienced by 40% to 50% of patients at admission and by 40% of patients at discharge.[8] It is accepted that such discrepancies can be reduced by conducting high-quality medication reconciliation (MedRec) at each transition of care.[8]

Incident Example

When a patient with a diagnosis of chronic renal disease was admitted to hospital for another reason, the patient did not receive any of the medications used to manage the renal condition because they were not ordered on admission. The required medications were not on the medication list provided by the family doctor, and the patient was not questioned about any additional medications during the best possible medication history (BPMH) interview.

MedRec is patient-centered and can empower the patient role in medication management. This multi-incident analysis showed opportunities for continuous quality improvement of MedRec processes at all transition points. These findings underscore the importance of trained professionals following a systematic process when reconciling home medications. In particular, when obtaining the BPMH, the interviewer should ask the patient or caregiver standardized questions and should also use multiple, reliable sources of information about the patient's medication use. All discrepancies should be clarified as soon as possible to avoid a delay in the patient receiving essential medications. Practitioners can use sector-specific resources, such as the Safer Health Care Now! Getting Started Kits and audit tools, to help design high-quality, systematic MedRec processes.

Conclusion

Care transitions are steps in a patient's journey through the healthcare system where a person is particularly vulnerable. Delays in administering doses of certain medications after a transition can lead to harm. This multi-incident analysis identified several themes that serve to challenge all practitioners and organizations to continuously improve their MedRec processes, to consider the feasibility of communicating information about medications by electronic means, to standardize handoff encounters, and to re-examine the patient-centeredness of procedures involving medication-related information at transitions.

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Safe Labelling of Compounded Products

YOUR INPUT IS REQUESTED

The label on a health product communicates key information and is an important aid in product identification, selection and administration. The ability to perform these activities safely is dependent on the end user being able to read and understand the information on the label.

Guidance is available from a variety of sources including Health Canada regulatory requirements, defined standards (e.g., National Association of Pharmacy Regulatory Authorities, United States Pharmacopeia) and guidelines (e.g., Canadian Society of Hospital Pharmacists). Opportunities exist to provide additional support for safe label design.

ISMP Canada has previously created a safety checklist for epidural product labels. We are currently exploring the development of a similar checklist for safe labelling of other compounded products—specifically parenteral solutions and oral liquids. ***We are seeking your input to assist in the identification of compounded drug products that might be priorities for improved labelling.***

For the purpose of this survey, a compounded product refers to a product (e.g., opioid infusion, chemotherapy infusor, irrigation solution, oral liquid) created by combining two or more ingredients to produce a final product in an appropriate form for administration.

Complete the survey (https://www.surveymonkey.com/r/VPVRNJL).

Your response by ***Friday, October 21, 2016*** is appreciated.

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

September 2016 - Newsletter:

5 Questions to Ask about Your Medications

Consumers may not know what questions to ask about their medications. Knowing which medications, if any, have changed and how to take all their medications properly can help avoid serious problems.

SafeMedicationUse.ca received a report highlighting the importance of asking healthcare providers the right questions about their medications. A consumer was prescribed corticosteroid and antibiotic eye drops pre-cataract surgery. Following the procedure, she mistakenly continued taking her corticosteroid eye drops and stopped taking the antibiotic eye drops – the reverse of the instructions provided. This misunderstanding occurred because the instructions were provided at an appointment 3 months before the operation, and following surgery, the consumer's reduced vision prevented her from reading the new instructions. Although serious harm did not occur, she did experience eye irritation and require multiple visits to her doctor—all which could have been prevented by a discussion with her provider.

Tips for Practitioners:

- Follow a structured process during each appointment, and allocate sufficient time to address any questions raised.
- Post the "5 Questions to Ask about Your Medications" poster in the office to remind yourself, and the patient, of key points for discussion. This poster can be found on the ISMP Canada website in multiple languages.
- Explain the answers to the 5 questions clearly and concisely, using show-and-tell or teach-back techniques as needed and as appropriate for optimal understanding.
- Assist patients in updating their medication lists any time a medication is added, stopped, or changed, and explain the rationale.

Tips to Share with Consumers:

These 5 questions should be asked at each appointment with a healthcare provider, including picking up a prescription at a pharmacy, to ensure safe medication use.

1. **Changes?** *Have any medications been added, stopped or changed, and why?*
2. **Continue?** *What medications do I need to keep taking, and why?*
3. **Proper Use?** *How do I take my medications, and for how long?*
4. **Monitor?** *How will I know if my medication is working, and what side effects do I watch for?*
5. **Follow-up?** *Do I need any tests, and when do I book my next visit?*

Watch this video to learn more, or download the "5 Questions to Ask about Your Medications" poster. (www.ismp-canada.org/medrec/5questions.htm)

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)

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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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