

ISMP Canada Safety Bulletin

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Allergy Never Events

- Prevention of “never events” is a priority in healthcare.
- To reduce the likelihood of never events involving known allergic reactions to medications:
 - Inquire about allergies and reactions to medications after every care transition, using standardized processes, to ensure timely capture of any changes.
 - Implement integrated and automated systems to seamlessly communicate updated allergy information to all healthcare providers involved in a patient’s care.

“Never events” is a healthcare term used to describe preventable patient safety incidents that, if they do occur, result in serious patient harm or death. Such incidents can be prevented through proactive identification of system vulnerabilities and potential failures, and application of appropriate interventions.¹ In 2015, the Canadian Patient Safety Institute, in collaboration with partners, created a list of 15 incidents classified as never events, 6 of which are associated with medication use. One of these medication-related never events is “patient death or serious harm due to a failure to inquire whether a patient has a known allergy to medication, or due to administration of a medication where a patient’s allergy had been identified”.¹ This bulletin describes 3 incidents and the opportunities for system improvement to prevent allergy never events.

Incident Examples

ISMP Canada previously described a patient who was diagnosed with heparin-induced thrombocytopenia (HIT) during a hospital admission. When the patient was readmitted to the emergency department (ED) of the same hospital, the allergy information was not flagged in the patient’s electronic health record, resulting in heparin being prescribed and administered.² HIT is a life-threatening immune response to heparin that is often categorized as an allergy and characterized by thrombocytopenia and thromboembolic sequelae. The patient experienced a devastating stroke after readministration of heparin.

In a recent example, a woman with documented penicillin allergy experienced a rash over her face because of an allergic reaction to ceftriaxone administered in the ED. A few days later, following surgery in the same hospital, ceftriaxone was again prescribed. Before administration of the antibiotic, the pharmacist asked the patient about the nature of her documented penicillin allergy and serendipitously discovered that the patient had reacted to ceftriaxone during her ED stay. Fortunately, the order was changed. In this case, neither ED nor inpatient records had captured the ceftriaxone allergy.

Another recent example occurred in a patient with a known history of significant reaction to nonsteroidal anti-inflammatory drugs (NSAIDs). An allergy to acetylsalicylic acid was documented in the patient’s paper chart, but this information was not captured in

the electronic health record, the resource used by the healthcare team. The patient died from a severe allergic reaction after an NSAID was prescribed and administered.

Background

The Canadian Institute of Health Information (CIHI), in its recent report entitled *Measuring Patient Harm in Canadian Hospitals*, states that in 2014-2015, about 1 in 18 Canadian patients suffered potentially preventable harm during hospitalization.³ Medication incidents, including never events involving medication allergy, represent 1 of the 31 types of harm selected for measurement by CIHI because “they are associated with evidence-informed practices that can reduce the likelihood of their occurrence”.³ The Canadian Patient Safety Institute’s [Hospital Harm Improvement Resource](#)⁴ brings together resources to complement CIHI’s hospital harm measure. It links measurement and improvement by providing evidence-informed resources that support patient safety improvement efforts.

Allergic reactions can result from administration of the medication to which the patient is allergic (primary allergen) or a medication with a chemical structure similar to the original allergen. This second scenario is known as a cross-reaction. Cross-reactivity played a role in the NSAID allergy described. However, an allergy to one medication does not always preclude use of another similarly structured agent. For example, patients who are allergic to penicillin have only a 1% risk of a cross-reaction with other antibiotics having similar structural components, such as ceftriaxone.⁵ The risk for cross-reactivity differs among various medication classes, and also depends on the type of reaction and the clinical situation.⁶ Therefore, the documentation of all allergies, including the nature of the reaction, is especially important as clinicians determine the best treatment option for patients.

Discussion

Healthcare providers have a responsibility to ask about and document each patient’s adverse drug reactions, including allergies. True allergies are

adverse reactions that involve the immune system, but many adverse reactions are drug sensitivities that do not involve the immune system.⁷ The patient’s and/or family’s recall of a past reaction may be unreliable, making it difficult to establish whether the reaction was an adverse effect, a medication sensitivity, or a true allergy.⁸ However, clarifying and accurately documenting, in detail, the nature and severity of any reaction, its timing in relation to drug administration, and its management ensures that valuable information is available when determining appropriate therapy options in the future.

By contrast, poor documentation compounds the problem of identifying drug allergies and can result in the occurrence of a preventable medication error, which may in turn result in patient harm and an extended hospital stay.⁸ Examples of poor documentation include inconsistent updates of allergy status and failure to transcribe information from paper-based to computerized systems.

Gaps in communication regarding a patient’s medication allergy status and/or reactions to medications can occur at many points in the healthcare system. Various technologies, such as computerized prescriber order entry (CPOE) and pharmacy drug management systems, can help to reduce medication errors caused by lack of information.⁹ Decision support tools during order entry, such as prompts to document allergies and alerts about potential allergic reactions and drug interactions, can be helpful. However, frequent alerts involving non-exact matches can result in alert fatigue and a high rate of overrides, which may decrease the clinical utility of these tools.¹⁰

In all 3 examples summarized in this bulletin, previous records of an allergic reaction had been documented for the patient at the hospital where the incident occurred. These records were from earlier encounters, either as an emergency patient or an inpatient. The occurrence of subsequent allergy never events, despite the existence of these records, speaks to the opportunity for hospitals to review their processes for allergy inquiry, the documentation that is expected in the patient record, and how various records and systems communicate with one another.

Recommendations

Institutions

- Standardize processes for determining and documenting patient allergies, and ensure that the documentation includes the nature and severity of the allergic reaction. Communicate guidelines to support identification of drug allergies, which should include information about how to differentiate a drug allergy from a sensitivity or adverse effect.^{8,11}
- Identify clinical areas where electronic transfer of critical patient information is not seamlessly captured in all patient records, and assess for improvement opportunities.
- Implement integrated and automated systems to seamlessly communicate updated allergy information to all healthcare providers involved in a patient's care.
- In institutions where CPOE has been implemented, ensure the presence of a forcing function in the medication ordering screen to require that drug allergy information be captured before any medication can be ordered. The order entry processes in pharmacy computer systems should likewise require that drug allergy information be entered before medication orders can be processed.
- In manual systems, record allergies using both generic and brand names, as some practitioners may not be familiar with both. CPOE and computerized pharmacy systems should have built-in functionality to recognize and link the generic and brand names for each medication.

Practitioners

- Confirm and update each patient's medication allergy record whenever a medical history is obtained and at each transition in care. Because allergies can develop at any time and patient recall may be unreliable, confirm medication allergies and reactions using a standardized process. This helps to ensure that each patient's record is current and complete.
- Modify medication allergy information only after direct reconciliation and confirmation involving the healthcare provider and the patient and/or a family member.¹¹ If the allergy status is modified, ensure

that the history of previous allergy investigation and documentation is available to all practitioners.

- Distinguish between medication allergies and sensitivities, and document them separately, if possible. This distinction can be critical when other healthcare providers are considering treatment options.
- When documenting allergies, avoid the use of abbreviations for drug names (e.g., "MTX" for methotrexate).

Conclusion

Allergy never events are preventable with appropriate system safeguards. This bulletin describes several examples of preventable harm and suggests strategies to minimize the occurrence of allergy never events. It also serves as a reminder to all organizations to evaluate their systems and processes relating to the accurate and appropriate documentation of patients' medication allergies and other medication sensitivities.

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

December 2016 - Newsletter:

Know Your Medications before Leaving on a "Pass"!

A hospital or a long-term care home may allow a "pass" or leave of absence for patients/residents to go to appointments or to spend time with family and friends. Before departure on a pass, it is important for the patient/resident and/or caregivers to learn about the person's medications and how to take them properly.

SafeMedicationUse.ca received a report from the daughter of a resident at an assisted-living home. The resident was using an inhaler every day. Before the resident left the assisted-living home on a pass, the nurse told the daughter to give the inhaler 4 times a day. From experience, the daughter knew that the inhaler was supposed to be given 2 times a day, so she asked the nurse about the discrepancy. The nurse then checked the records, which confirmed that the daughter was correct. This incident highlights the importance of reviewing medications with patients/residents and/or their caregivers before they leave on a pass.

Tips for Practitioners:

- Establish a systematic process for prescribing, dispensing, and releasing medications for a pass. Clearly define the roles and responsibilities for each healthcare provider involved in the process.
- For each pass, provide the patient/resident or caregiver with an up-to-date list of medications and a blank record to document medication administration.
- Label all medications provided for a pass with clear instructions for use.
- Review the instructions for each medication with the patient/resident or caregiver, and confirm that the information is understood.

Tips to Share with Consumers:

- Before leaving on a pass:
 - Ask a healthcare provider for an up-to-date list of your medications, including any changes made recently.
 - Make sure you have enough medication to last for as long as you plan to be away.
 - Check that all medications are labelled with instructions that you understand.
 - Ask to be shown how to properly take your medications and where to store them.
 - Find out whether you have to write down the medications you take while away on a pass.
- If you are unsure about anything, talk to your doctor, nurse, or pharmacist.

For more information, read the full newsletter: [Know Your Medications before Leaving on a "Pass"!](http://www.safemedicationuse.ca/newsletter/newsletter_pass.html)
(www.safemedicationuse.ca/newsletter/newsletter_pass.html)



**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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