

ISMP Canada Safety Bulletin

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ALERT: Use of One Insulin Pen for Multiple Patients is a High-Risk Practice

Insulin pens are devices intended to help patients correctly and accurately administer their own insulin. There are 2 types of pens: reusable pens, which must be loaded with a cartridge containing insulin that can be replaced when empty, and disposable prefilled pens, which come with an insulin cartridge already in place (see Figure 1 for an example of this type). With both types of pens, a new needle tip should be attached for each dose administration. The benefits of using an insulin pen (including convenience and accuracy of doses delivered)¹ have led many facilities to switch from vials and syringes to insulin pens. This alert describes a high-risk practice that may occur when insulin pens are used in facilities.

Incident Examples

ISMP Canada received a report from a hospital describing several incidents in which one insulin pen was shared among patients. In one instance, a nurse administered insulin to a patient using an insulin pen, changed the needle on the pen, and then used the same pen to administer insulin to a second patient. In 2 other instances, different nurses used a syringe to withdraw insulin from a cartridge within a pen that had already been used for another patient. The patients involved required screening because of the risk of transmission of blood-borne pathogens through cross-contamination from the pen. None of the patients involved were adversely affected.

Concerns

In February 2013, the Institute for Safe Medication

Practices (US) published an alert advising hospitals to reconsider use of insulin pens for routine administration of insulin to inpatients because of ongoing concerns about unsafe practices such as sharing of insulin pens.² In that alert, ISMP highlighted ongoing concerns related to the high-risk practice of sharing insulin pens between patients and evidence of biological matter entering the cartridge after an injection. Such inappropriate use of insulin pens raises concerns about the risk of transmitting blood-borne pathogens from one patient to another. Since then, ISMP Canada has received many requests for guidance on the safe use of insulin pens in organizational settings. ISMP Canada plans to review this issue in detail and will share the findings in a future Safety Bulletin. In the interim, the following recommendations for the use of insulin pens are suggested to limit the risk to patients.



Figure 1 – Example of a disposable prefilled insulin pen. This type of pen comes prefilled with insulin. Once the insulin content is depleted, the entire pen is discarded. In contrast, a reusable insulin pen must be fitted with a cartridge containing insulin. Once the existing cartridge is empty, the cartridge is removed and discarded, and a new cartridge is put into place. A new needle should be used for each injection.

Safe Practice Recommendations

- If insulin pens are used, ensure that they are dispensed with patient-specific labels and that each patient's identification is verified against the label before administration.
- Educate all healthcare providers who are expected to use insulin pens about the risks of using a single insulin pen for more than one patient. Educational efforts should include the following information:
 - Each pen and each cartridge is to be used for one patient only and should never be shared between patients.^{3,4,5}
 - Insulin cartridges are intended to be used with insulin pens and should not be treated like vials of insulin (i.e., insulin should not be removed from the cartridge for use without the pen).
 - The use of an insulin pen for more than one patient, even with a needle change, may result in transmission of human immunodeficiency virus (HIV), hepatitis B, hepatitis C, or other blood-borne pathogens.⁵
- Educate patients about the risks of using a single insulin pen for more than one person.

The One and Only Campaign is a public health campaign led by the Centers for Disease Control and Prevention (CDC) and the Safe Injection Practices Coalition, which aims to raise awareness among the general public and healthcare providers about safe injection practices, including the safe use of insulin pens. More information about the campaign, including free access to many educational resources (Figure 2), can be found at www.ONEandONLYcampaign.org⁵

Acknowledgement

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Figure 2 – Example of an educational resource from the One and Only Campaign.⁵

References

1. Considering insulin pens for routine hospital use? Consider this... ISMP Med Saf Alert. 2008 [cited 2013 Apr 15];13:1-3. Available from: <http://www.ismp.org/newsletters/acutecare/articles/20080508.asp>
2. Ongoing concern about insulin pen reuse shows hospitals need to consider transitioning away from them. ISMP Med Saf Alert. 2013;18(3):1-2.
3. FDA Alert: Information for healthcare professionals: risk of transmission of blood-borne pathogens from shared use of insulin pens. Silver Spring (MD): US Food and Drug Administration; 2009 Mar 19 [cited 2013 Apr 3]. Available from: <http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/DrugSafetyInformationforHealthcareProfessionals/ucm133352.htm>
4. CDC clinical reminder: Insulin pens must never be used on more than one person. Atlanta (GA): Centers for Disease Control and Prevention; 2012 Jan 5.
5. Insulin pen safety — one insulin pen, one person. Atlanta (GA): Centers for Disease Control and Prevention and Safe Injection Practices Coalition; [cited 2013 Apr 11]. Available from: <http://www.oneandonlycampaign.org/content/insulin-pen-safety>

Another Mix-up Between Bisoprolol and Bisacodyl

A recent ISMP Canada Safety Bulletin reported on the potential for harm with mix-ups between bisoprolol and bisacodyl.¹ Recently, ISMP Canada's consumer reporting and learning program, SafeMedicationUse.ca, received a report about an elderly patient who received bisoprolol instead of bisacodyl from a community pharmacy. After taking the bisoprolol for 2 weeks, the patient experienced deterioration and was admitted to hospital with hypotension. Because a medication list (which listed bisacodyl, not bisoprolol) was brought to the hospital when the patient was admitted, the correct medications were administered during the hospital stay. The patient was treated, stabilized, and released after a hospital stay of almost 2 weeks. However, no one identified the medication error or realized that the patient had been taking bisoprolol at home.

After returning home, the patient began taking the bisoprolol again. Several weeks later, the patient became weak and confused. At that time, a family member discovered the error. The family member who reported the incident believed that the original medication error was likely the cause of the hospital admission.

Several factors may have contributed to this incident:

Look-Alike / Sound-Alike Medications

The look-alike/sound-alike (LASA) property of the 2 medication names was almost certainly a factor contributing to the original medication error. A recent ISMP Canada Safety Bulletin highlighted medication errors, themes, and contributing factors related to this particular LASA pair and discussed recommendations for consideration, including review of storage areas for these drugs and examination of procurement practices in both acute care and community pharmacies.¹

Failure of the Medication Reconciliation Process

The overall aim of medication reconciliation is to ensure that communication about medications at all transitions of care is accurate and effective. Obtaining a Best Possible Medication History (BPMH) is the cornerstone of the medication reconciliation process. A BPMH is more comprehensive and more accurate than a primary medication list that does not use multiple sources of current information. The BPMH aids in making decisions that are based on accurate information because multiple reliable sources of information are used to create a snapshot of the medications the patient was taking at the time of transition.² However, not all sources of information are considered equal. Generally, the most useful sources are the following:

- interview with patient or a caregiver
- medication vials or blister packs
- current medication list (i.e., from the pharmacy or provincial records)

In the case described above, the medication error might have been identified earlier if the medication vials had been examined at the time of the hospital admission or if the pharmacy's records had been consulted.

Additional information on medication reconciliation can be found on the ISMP Canada website: www.ismp-canada.org/medrec

Involvement of Consumers and Patients

This incident also highlights the important role that consumers can play in preventing or addressing harmful medication incidents. Healthcare practitioners are also reminded of the importance of providing patients with the necessary information and education (e.g., SafeMedicationUse.ca safety bulletins) to support this role:

- For consumer information about checking prescriptions:
www.safemedicationuse.ca/newsletter/downloads/ISMP_C_2010_03_Check_Your_Prescription.pdf
- For consumer information about identifying errors with similarly named medications:
www.safemedicationuse.ca/newsletter/downloads/ISMP_C_2012_05_similarNames.pdf

References

1. Concerned reporting: mix-ups between bisoprolol and bisacodyl. ISMP Can Saf Bull. 2012 [cited 2013 Apr 8];12(9):1-6. Available from: http://www.ismp-canada.org/download/safetyBulletins/2012/ISMP_CSB2012-09-ConcernedReporting-BisoprololandBisacodylMixups.pdf
2. Medication reconciliation in acute care: getting started kit. Canadian Patient Safety Institute; 2011 Sep [cited 2013 Apr 2]. Available from: http://www.ismp-canada.org/download/MedRec/Medrec_AC_English_GSK_V3.pdf



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.

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