

## Patient Report of Insulin Mix-Up Shared

A patient shared the following incident with ISMP Canada, in the hope of preventing similar incidents in the future.

A patient with insulin-dependent diabetes had a prescription for Novolin<sup>®</sup>ge 30/70 Penfill<sup>®</sup> and was self-administering the drug every morning and every evening by insulin pen (Novolin-Pen<sup>®</sup>). The patient had recently obtained from the community pharmacy a refill of the cartridge prescription, receiving several boxes of 5 cartridges each. On the morning of the incident, the patient had inserted a new cartridge, taken from one of the new boxes, into the insulin pen. A short time after self-injecting the prescribed morning dose, the patient was found in a diaphoretic state, with pupils dilated and with a decreased level of consciousness. Fortunately, the symptoms were recognized as signs of hypoglycemia, and the patient was given sugar followed by additional food. Shortly thereafter, the patient's blood glucose level, measured with a glucometer, was approximately 2.5 mmol/L. Because of the unexplained hypoglycemia, the insulin supply was checked. It was discovered that one box of NovoRapid<sup>®</sup> insulin had been given to the patient, along with several boxes of the correct Novolin<sup>®</sup>ge 30/70. A dose of Novolin<sup>®</sup>ge 30/70 consists of 30% short-acting insulin and 70% intermediate-acting insulin.<sup>1</sup> In contrast, NovoRapid<sup>®</sup> is an ultrashort-acting insulin.

The following contributing factors were identified in this report:

- Novolin<sup>®</sup>ge 30/70 and NovoRapid<sup>®</sup> cartridges have similar packaging and labelling (Figures 1, 2, and 3).
- Although a barcode system was in use at the pharmacy, only one of the dispensed boxes had been scanned.



Figure 1. From left to right, Novolin<sup>®</sup>ge 30/70 Penfill<sup>®</sup> (name highlighted with brownish band) and NovoRapid<sup>®</sup> Penfill<sup>®</sup> (name highlighted with orange band).



Figure 2. From left to right: Novolin<sup>®</sup>ge 30/70 cartridges and NovoRapid<sup>®</sup> cartridges as they appear after removal from the box, still in their over-wrap.



Figure 3. From left to right: Novolin<sup>®</sup>ge 30/70 cartridge and NovoRapid<sup>®</sup> cartridge.

In addition to these factors, NovoRapid<sup>®</sup> and Novolin<sup>®</sup>ge 30/70 are likely to be stored in close proximity in a pharmacy: each is a form of insulin, both require refrigeration, and both brand names begin with “Novo”. As such, an incident like this one could easily occur in other pharmacies, as the underlying factors are likely to exist wherever these products are stocked (e.g., community pharmacies, hospitals).

The community pharmacy alerted its staff to the incident as a reminder of the standard procedure to check and scan every package during the dispensing process. ISMP Canada also offers the following recommendations for consideration:

- Segregate products. Consider storing insulin products according to their onset of action (e.g., rapid-acting, short-acting, intermediate-acting, long-acting) in well-

differentiated areas of the refrigerator (e.g., on different shelves).

- When a patient picks up his or her prescription, include a physical review (e.g., packages, labels, the medication itself) of the medications as they are provided to the patient. Such a review gives an opportunity for an additional check of medications.
- Actively involve patients (and their family members) in the medication-use process. Instruct them to ask questions if they notice any unexplained changes in either the packaging of a medication or in the drug itself at the time of receiving the medication or at any other time.
- Share this bulletin to alert practitioners to the problem, to raise awareness of this incident, and to proactively anticipate and address problems.

The Canadian Diabetes Association recommends “the use of premixed insulins and prefilled insulin pens as an alternative to mixing insulins ... to reduce dosage errors and

potentially improve glycemic control” for those above 60 years of age.<sup>2</sup> The availability of insulin cartridges and pens has simplified the self-administration of insulin for patients, because there is no need to draw the insulin into a syringe. ISMP Canada has alerted Novo Nordisk (the manufacturer of both NovoRapid® and the Novolin®ge 30/70 cartridges) to this incident and the reported look-alike concern (for both cartridges and external packaging).

**ISMP Canada gratefully acknowledges the expert review of this bulletin provided by (in alphabetical order):**

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**References**

1. Repchinsky C, editor. Compendium of pharmaceuticals and specialties. Ottawa (ON): Canadian Pharmacists Association; 2007. p. 1620-1622, 1627-1628.
2. Canadian Diabetes Association, Clinical Practice Guidelines Expert Committee. Diabetes in the elderly. In: Clinical practice guidelines 2003 Toronto (ON): Canadian Diabetes Association; 2003 [cited 2007 Nov 15].p. S106-S109. Available from: <http://www.diabetes.ca/cpg2003/downloads/elderly.pdf>

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**Medication Incidents (including near misses) can be reported to ISMP Canada:**

(i) through the website [http://www.ismp-canada.org/err\\_report.htm](http://www.ismp-canada.org/err_report.htm) or

(ii) by phone: 416-733-3131 or toll free: 1-866-544-7672.

ISMP Canada can also be contacted by e-mail: [cmirps@ismp-canada.org](mailto:cmirps@ismp-canada.org). ISMP Canada guarantees 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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