

# Community/Ambulatory Care

# ISMP Medication Safety Alert!®

Educating the Healthcare Community About Safe Medication Practices

## Prevent administration of ear drops into the eyes

**PROBLEM:** When a practitioner, patient, or caregiver accidentally instills ear drops into the eye, it may lead to an immediate burning and/or stinging sensation, and the patient may later experience pain, redness, swelling, or blurred vision. Patients may need to flush their eyes with water or normal saline and/or apply warm or cold compresses. Others may need to go to the emergency department (ED), an ophthalmology clinic, or their eye doctor for care.

Aside from look-alike eye and ear medication names and containers, another reported reason for this type of error is confusion between the words “optic” and “otic.” Also, practitioners and patients sometimes use the term “eyedropper” when referring to the container used to instill both eye and ear drops, which could invite an error in which the person reading the label fails to see unexpected information in plain sight, such as the product formulation, a warning, or a picture/icon of an eye or ear. The eyes and ears are relatively close together anatomically, which adds a “human anatomy factor” to the equation. While ear drops should never be used in the eyes, eye drops are made to be gentle and are sometimes used in the ears due to cost or availability. This practice can contribute to practitioners using products interchangeably.

We have received many reports of these types of mix-ups over the years. Recent reports suggest errors are still occur between eye and ear drops:

*A prescriber ordered two eye drops and one ear drop, carbamide peroxide (for earwax accumulation), for a patient. The patient’s nurse utilized barcode scanning to verify the medications were correct. However, the nurse administered all drops via the ophthalmic route. The nurse was used to carbamide peroxide being dispensed in a bottle with a long neck, making it obvious that it was an otic formulation. However, this time it was dispensed in a bottle resembling an ophthalmic container (Figure 1).*

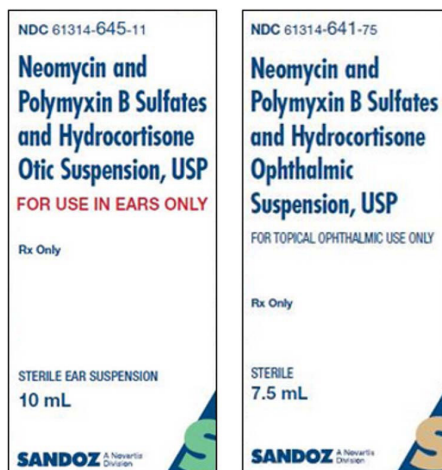


**Figure 1.** Carbamide peroxide 6.5% ear drops by Major Pharmaceuticals (left) is packaged in a dropper bottle similar in size and shape to an eye drop container. **DEBROX** by Prestige Consumer Healthcare has a long neck for otic administration and the label states “EARWAX REMOVAL AID” in large font (right).

*A telehealth provider prescribed what they thought was neomycin sulfate 3.5 mg/mL, polymyxin B 10,000 units/mL, and hydrocortisone 1% ophthalmic drops for a patient with conjunctivitis. After picking up the medication and instilling 4 drops into their eye, the patient felt severe burning. They read the label and realized the product was an otic suspension. The patient flushed their eye with water, but it did not relieve the pain. (An example of look-alike cartons is shown in Figure 2.)*

**SAFE PRACTICE RECOMMENDATIONS:** To reduce the risk of administering ear drops into the eyes, consider the following recommendations:

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**Figure 2.** The carton of neomycin, polymyxin B, and hydrocortisone otic suspension (left) states “FOR USE IN EARS ONLY,” but this can be overlooked when eye (right) and ear product cartons look similar.

## SAFETY briefs

**⚡ Lost in translation.** Many state boards of pharmacy require pharmacies to provide patients with limited English proficiency information, including instructions printed on the pharmacy label and printed patient education material, in their preferred language. Some states allow the translated directions to appear on either the pharmacy label or as a supplement to the label. ISMP has long recommended that patients be provided with written information, in their preferred language, about their medications, and/or that important information is provided verbally to them by a trained interpreter or through a language line. However, ISMP has been receiving distressing insights from specialty and community pharmacies that the process to supply prescription information in non-English languages is not refined, and, in fact, is leading to errors.

A pharmacist recently reported that their outpatient pharmacy dispensing system incorrectly translated medication directions into Spanish. The pharmacy had received a prescription for pen needles with the

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## MSI Workshop for Community, Mail Order, and Specialty Pharmacy

▶ **Don’t miss this opportunity!** Register for a unique, virtual **ISMP Medication Safety Intensive (MSI)** workshop designed for those working in community, mail order, and specialty pharmacies. Learn how to identify risks before they cause harm and how to use data for continuous improvement. This program will take place on **October 20 and 27, 2023, from 7:30 am – 4:30 pm ET**. For more information, please visit: [www.ismp.org/node/75243](http://www.ismp.org/node/75243).

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**Storage.** Keep medications in their original cartons, as icons of an ear or eye (**Figure 3**) are sometimes on boxes but not on dropper bottles. Separate the storage areas for ear and eye drop bottles on pharmacy shelves.

**Prescribing.** Build order sets/sentences in the electronic health record (EHR) to guide prescribers to select the appropriate route, and automatically link the order with the corresponding product formulation. Specify the route of administration (e.g., right eye, left eye, each eye) and never use the abbreviations OD, OS, or OU, which can be mistaken as AD, AS, or AU (e.g., right ear, left ear, each ear) ([www.ismp.org/node/8](http://www.ismp.org/node/8)). Restrict prescribers from ordering ear drops for the “eye.”

**Dispensing.** Utilize barcode scanning before dispensing. Consider placing an auxiliary label with a photo of an ear or eye on the carton or dropper bottle (if not already included by the manufacturer) to specify “ear” or “eye” drops.

**Administration.** When possible, schedule ear drops and eye drops to be administered on different schedules (e.g., if given once daily). In long-term care facilities, use barcode scanning before administration and confirm the medication, route, and indication with the patient before administering ear drops or eye drops. Immediately dispose of any discontinued product.



**Figure 3.** Examples of standard graphics that manufacturers can use on cartons and container labels to visually portray use in the ear (left) or the eye (right).

**Patient education.** Confirm the expected route of administration with the patient. Counsel patients using the teach-back method to reinforce the route. Educate patients to keep ear and eye drops in the carton, store them in separate locations at home, and discard any leftover medication.

**Recommendations for manufacturers.** We encourage manufacturers to consider strategies to reduce the risk of ear versus eye wrong route errors, including differentiating the container (e.g., bottle with a long neck for otic formulations), packaging, and labeling as well as adding prominent standard text (e.g., “For use in ears only”) to the respective carton and container labels. Also add standard graphics that visually depict the ear or eye (**Figure 3**) to the carton and/or container labels ([www.ismp.org/ext/930](http://www.ismp.org/ext/930)).

## Education in proper use of insulin pen needles is needed

A pharmacist reported an event in which a nurse asked if they could withdraw insulin out of an insulin pen cartridge using an insulin syringe. Since insulin sometimes dripped from the pen needle after injection, the nurse was concerned that the patient would not receive the full dose if using the pen. Upon further investigation, the pharmacist discovered that, earlier in the day, the nurse had withdrawn a dose of U-500 insulin out of the pen cartridge because pen needles were not available. The nurse used a U-100 insulin syringe (U-500 insulin syringes were not available) and withdrew the insulin volume to the 25 unit marking on the syringe, intending to provide the prescribed 25 units of U-500 insulin. However, since they used a U-100 syringe, this resulted in a 5-fold overdose. The patient subsequently required treatment for hypoglycemia.

ISMP highly recommends the use of insulin pens for patients who require U-500 insulin. There is not a safe way to use U-500 insulin vials in healthcare facilities since available U-500 syringes lack a safety guard to prevent needlestick injuries. Use of a U-100 syringe with U-500 insulin is also not safe because it often leads to dosing errors, as happened in this case. However, even with

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instructions to use the needles to inject liraglutide daily as directed. However, when the pharmacy dispensing system translated the instructions into Spanish, “Inyector 3 veces al dia. Usar todos los días segun lo indicado” was printed on the prescription label. This translation incorrectly directs the patient to inject the medicine three times a day and to use daily as directed. The problem is that liraglutide is intended for daily administration, not three times a day. The prescription with the incorrect instructions was dispensed multiple times before it was discovered.

As this appears to be a pervasive issue, we would like to hear from you about your experiences with the translation functionality built within your pharmacy dispensing system. Please take a few minutes to share any problems you have encountered, along with the computer systems involved, by submitting a report to ISMP at: [www.ismp.org/node/18107](http://www.ismp.org/node/18107) or sending an email to: [medicationsafety@ecri.org](mailto:medicationsafety@ecri.org). We will use the information to actively advocate for system changes on behalf of patients and pharmacies. Thank you!

### The first 5 letters are not always enough.

A patient was to receive pyridoxine (vitamin B6). However, the pharmacy technician entered pyRIDostigmine liquid, an acetylcholinesterase inhibitor, instead. The error was caught by the pharmacist prior to dispensing it to the patient. The two medication names share several overlapping letter characters. Both start with the same six letters, pyrido-, and end with the same three letters, -ine. When typing in the beginning of the drug name, pyr-, both medications appeared as an option for the pharmacy technician.

Although the use of a specific number of letter characters (e.g., at least 5 characters) can help reduce selection errors, there is no magic number regarding how many may be needed, as in this case when each drug shares the same six characters at the beginning of the name. It is best to keep adding letters until the intended drug name

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U-500 pens, healthcare professionals must recognize that pen cartridges should never be used as an insulin vial. Pharmacists, consultant pharmacists, and nurse educators should reinforce this education since pockets of “air” have been observed in cartridges of insulin pen injectors after aspirating some of the drug with a needle. If the pen injector or cartridge is not discarded, and the air is not eliminated before delivering a subsequent dose, the patient could receive less than the desired dose of insulin as well as a subcutaneous injection of air.

Ensure nurses have appropriate insulin pen safety needles to administer insulin. Consider reviewing proper administration techniques, such as using a new pen needle with each injection, keeping the needle under the patient’s skin for at least 10 seconds after administration to reduce leakage from the injection site or needle once the needle is withdrawn ([www.ismp.org/ext/1130](http://www.ismp.org/ext/1130)), and never using the pen for more than one patient. Educate staff about the differences between U-500 and U-100 insulin and their associated insulin syringes. Also, consider building these reminders into applicable order comments in the electronic health record and medication administration record.

For more strategies on preventing errors with insulin, including risks associated with the use of U-500 insulin as well as insulin pens, review the **ISMP Guidelines for Optimizing Safe Subcutaneous Insulin Use in Adults** ([www.ismp.org/node/93](http://www.ismp.org/node/93)).

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appears distinct by itself. Adding in the drug strength may also help limit similar names from appearing together on the same screen. Use of tall man letters can help differentiate similar drug names if practitioners are faced with a list of drug names. Prescribers should include the purpose of the medication on the prescription to help pharmacists intercept potential mix-ups.

## Worth repeating...



### Mix-ups between Biktarvy dosage strengths

A prescriber ordered the wrong strength of **BIKTARVY** (bictegravir/emtricitabine/tenofovir alafenamide) for an adult patient. Instead of prescribing Biktarvy 50-200-25 mg tablets, they ordered Biktarvy 30-120-15 mg, which is the appropriate strength for pediatric patients weighing 14 to less than 25 kg. Thankfully, a pharmacist at the specialty pharmacy intercepted the error.

In the December 2022, issue of this newsletter, we wrote about dosing errors involving Biktarvy. In one case, a patient with human immunodeficiency virus (HIV), who had been stable on the correct adult dose of Biktarvy, was prescribed and dispensed the pediatric formulation for multiple months following a hospitalization. By the time the error was discovered, the patient’s viral load was detectable, which was attributed to the prolonged underdosing.

To help prevent errors, some key points are **Worth repeating**. Educate prescribers, nurses, and pharmacy staff who may manage HIV medications on the various dosing regimens and combination therapies. Create weight-based order sentences with dose range checking in the electronic health record (EHR) to guide prescribers to select the correct dose. Pharmacy computer systems should alert and prevent entry of the pediatric formulation for adult patients using patient information such as age and/or weight. If your organization only services adult patients, consider removing the pediatric dose from your preferred drug list.

## Welcome 2023-2024 Fellows

**Shawn Bookwalter**, PharmD, MSHI, BCPS, is the **2023-2024 ISMP Safe Medication Management Fellow**, supported by the US Army. Shawn is an active-duty US Army Officer and has most recently worked as the Director of Pharmacy Services at Martin Army Community Hospital in Fort Moore, GA. He received his Doctor of Pharmacy from The Nesbitt School of Pharmacy, Wilkes University, in Wilkes-Barre, PA, and a Master of Science in Health Informatics from Liberty University, Lynchburg, VA. Shawn aspires to develop a holistic understanding of medication safety during his year at ISMP.

**Jessica Trinh**, PharmD, is the **2023-2024 FDA/ISMP Safe Medication Management Fellow**. She completed her Doctor of Pharmacy degree at Loma Linda University in Loma Linda, CA. She completed a PGY-1 acute care residency at St. Joseph Medical Center in Tacoma, WA. Jessica is excited to learn more about drug safety advancements and hopes to use the skills learned in a regulatory agency or in the pharmaceutical industry following this fellowship.

**Mariam Gawdat**, PharmD, MS, is the **2023-2024 FDA/ISMP Safe Medication Management Fellow**. She completed her Doctor of Pharmacy and Professional Science Masters in Biomanufacturing and Bioprocessing at Albany College of Pharmacy and Health Sciences in Albany, NY, where she also completed an ambulatory care residency. In addition, she completed a Bachelor of Science in Biology at Siena College in Albany, NY. Mariam aspires to use her medication safety skills in making positive impacts on patients’ health by promoting safe and effective medication-use practices and innovative pharmaceuticals.

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