

Community/Ambulatory Care

ISMP Medication Safety Alert!®

Educating the Healthcare Community About Safe Medication Practices

Shipping and delivery errors—Part II

Specialty, mail service, and retail pharmacies may ship or deliver medications directly to patients' homes to improve convenience, access, and adherence. Many specialty and mail service pharmacies have a centralized model where one main pharmacy ships to many states, provider offices, or infusion centers to cover a wide patient population. There are many steps involved in this process, including delivery set-up in the computer system and packaging a patient's prescriptions for shipment, and thus, allows for additional opportunities for errors. In **Part I** of our report published in February 2023, we presented various types of shipping and delivery issues along with identified contributing factors that can occur when pharmacies ship or deliver medications to patients. In **Part II**, we present different strategies pharmacies can implement that may help prevent shipping and delivery issues. We also want to thank those of you who shared strategies you have implemented or considered implementing so we can share them with others.

Ensure the Correct Address

Verify the correct shipping address is being used for each delivery. One pharmacy shared that, to help accomplish this, their staff asks the patient for their shipping address at the beginning of the call and then reads back the address at the end of the call. If a patient moves or is no longer at an address, the old address should be deleted from the patient's profile, and their preferred shipping address should be updated to prevent shipping the medication to the outdated address. Pharmacy staff should ensure delivery setup is completed while they have the patient on the phone or immediately after, without interruption. Pharmacy staff should be encouraged to put their phone on "busy" and/or utilize the "After Call Work (ACW)" system that pauses incoming calls while they complete an order. Before moving to the next patient call, pharmacy staff should double check the shipping address for accuracy. If the patient submits a request online, or via a mobile application, for the medication to be shipped to them, the system should require the patient to enter and/or confirm the address to which the medication should be delivered. Finally, make the patient's current address visible in software systems, on shipping material, and/or on shipping dashboards.

At the shipping station, have pharmacy staff independently compare the prescription labels (patient name and address) to the shipping label (patient name and address). If these do not match, remove the order from the workflow and resolve the discrepancy before it is shipped. Have a different person than who printed the shipping label perform the double check.

Be Proactive

Systems should be in place to monitor and identify when prescriptions are due for refill. This should help prevent patients from calling the pharmacy at the last minute for an urgent delivery. Being proactive will provide the pharmacy with time to correct any issues that may arise in the delivery process. Multiple pharmacies have indicated that they work ahead by at least one day (e.g., set up delivery on Tuesday, ship orders on Wednesday), which allows them time to organize their workflow, resolve any issues, and help ensure packages are shipped on time.

Establish a protocol to guide decisions as to when a shipment should be held, rescheduled, or provided via an alternate method due to anticipated weather or other distribution delays. Monitor for expected delays such as severe weather, weekends (if not able to provide overnight shipping), or holidays when there may be a higher potential for carrier service errors or delays. For example, one pharmacy works ahead (before the patient is completely out of medication) to allow time

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SAFETY briefs



Posaconazole packets and kit require patient education. NOXAFIL

POWDERMIX (posaconazole) 30 mg/mL delayed-release oral suspension by Merck is indicated for the prophylaxis of invasive *Aspergillus* and *Candida* infections in severely immunocompromised patients. The product is for pediatric patients from 2 years to less than 18 years old who weigh less than or equal to 40 kg. This formulation was developed as a more tolerable, weight-based dosing alternative to the oral tablet and is said to provide more reliable bioavailability given the poor gastrointestinal absorption of the immediate-release oral suspension.

However, using the delayed-release Noxafil PowderMix could pose confusion for some
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IMPORTANT! Read and utilize the Community/Ambulatory Care Action Agenda

One of the most important ways to prevent medication errors is to learn about problems that have occurred in other organizations and to use that information to prevent similar problems at your practice site. To promote such a process, selected items from the **January – April 2023** issues of the **ISMP Medication Safety Alert! Community/Ambulatory Care** newsletters have been selected and prepared for you and your staff to stimulate discussion and collaborative action to reduce the risk of medication errors. Each item includes a brief description of the medication safety problem, a few recommendations to reduce the risk of errors, and the issue date to locate additional information.

The **Action Agenda** is available for download as an Excel file (www.ismp.org/node/80589).

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to adjust deliveries. They will reschedule deliveries, or greatly reduce the deliveries going out if severe weather is forecasted or there are other expected delays, such as holidays. The courier driver may still deliver a few urgent packages, even in bad weather, but by reducing the volume of deliveries on those days, it reduces the chance of delays and the number of potentially impacted patients. Track shipped packages and notify the patient or prescriber if shipments are delayed.

Keep All Prescriptions for an Order Together

Investigate methods to consolidate a patient's incoming prescriptions to increase efficiency during packaging and delivery. Simplify the process to reduce the chance of error. Use bins or baskets to keep all prescriptions associated with one order together. Only work on one patient or order at a time to prevent mix ups. Implement barcode scanning that requires staff to scan all items in the order at each step of the process to ensure that only one patient's medications are included in the order. Ensure the patient's name on the shipping label matches the patient's name on the prescription labels. Once the order is complete, keep all items together (e.g., place all items in a plastic bag) as they move through the next steps of the process.

If barcode scanning is not an option, establish a process to ensure the correct medications and number of medications are included in the order. One pharmacy, which is not currently able to barcode scan orders, prints an extra shipping label prior to filling the order. The label includes the total number of medications or products that should be in the order (e.g., "5 medications"). At each stage (e.g., production, verification, charging/billing), a staff member is responsible for verifying that the correct five medications are in the order. After looking at the order, the staff person writes the number five on the label and circles it, and includes their initials as validation. At the final shipping station, the staff member verifies the correct medications are with the order, that the order contains the correct number of medications, and includes a paper notice for the patient stating, "Your package contains 5 medications."

Use Delivery Technology

Integrate the delivery service software with the pharmacy dispensing and/or clinical management software to automate adding the delivery address. For example, the dispensing software may be able to generate a barcode that can be scanned to enter the address automatically into the delivery service portal. Explore enhancements to software systems to automatically populate shipping details based on pre-established criteria (e.g., signature required for high-cost medications, delivery method for cold-chain products, shipping address).

Many shipping technology vendors offer solutions to minimize pharmacy shipping and delivery issues. For example, their software may provide regular reports, data analytics, and weather pattern tracking by zip code and may provide alerts to pharmacy staff for potential errors, weather-related delays, or other delays. If there is a snowstorm affecting a certain state, the pharmacy will know to hold the medication deliveries to that state for a few days to prevent delivery delays and wasted medication. In addition, the pharmacy can proactively reach out to impacted patients and reschedule deliveries. Explore whether the delivery software company, shipping company, and/or courier service can intervene in the case of delivery delays to capture and maintain the chain of custody and temperature stability (or return the packages to the pharmacy) until the packages can be delivered.

Maintain Clutter-free Workstations

Maintain a packing and shipping area that is large enough to store shipping supplies (e.g., boxes, coolers, ice bricks) in an organized manner and provide safe separation of different patients' prescriptions during the packing process. Pharmacy staff should package one patient's order

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parents and caregivers. The product is only available as a kit. The kit includes eight 300 mg single-use packets of Noxafil PowderMix and mixing liquid in a bottle that contains 473 mL. Each packet should be mixed with 9 mL of the mixing liquid in the included mixing cup. So, only a total of 72 mL will be used for the eight drug packets. In addition, the package insert recommends using the special notched tip syringes also included in the kit. The parent or caregiver will need to use the 10 mL (blue) syringe (**Figure 1**) to measure the 9 mL of mixing liquid and then choose the appropriate syringe for the prescribed dose volume: the 3 mL (green) syringe if the dose is 3 mL or less; the 10 mL (blue) syringe if the dose is more than 3 mL. And, once mixed, the suspension must be administered within 1 hour (www.ismp.org/ext/1131).

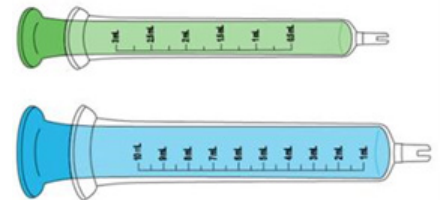


Figure 1. Oral syringes (two of each size) with a special notched tip are provided in the Noxafil PowderMix kit and must be used to prepare and administer this product.

The manufacturer told us that the volume of mixing liquid in the bottle was determined by an external vendor and can be used until the date of expiration, if stored as recommended. The syringes in the kit are custom designed oral syringes with a special notched tip (**Figure 1**) to prevent aggregation of the suspension during preparation and administration. The manufacturer told us that during development, powder flakes would clump and block part of conventional oral syringe tips. The potential for loss of dose resulted in the need for custom-designed syringes. The notched tip provides an opening that allows the entire admixed dose to be administered and not remain in the syringe or syringe tip. To ensure accurate dosing, no other syringe types (e.g., other oral syringes, ENFit syringes) should be used.

The unique characteristics of the product require prescribers and pharmacists to

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at a time before working on the next patient's order. When planning relocation or construction of pharmacy spaces, plan for adequate, distraction-free space. Long-term plans may include centralization of delivery services to remove this activity from each pharmacy location.

Establish Accountability

Identify a staff member who is responsible for the shipping and delivery process in the pharmacy. Keep track of orders that are set up for delivery and ensure all are shipped correctly and on time. Ideally, utilize shipping, pharmacy dispensing, and/or clinical management software to accomplish this. These systems often have the capability to provide a manifest report that can be run at intervals throughout the day (or at the end of the day) to support auditing and tracking. If you are keeping track of your orders manually, consider summarizing daily orders on a log that staff can review to ensure all orders were shipped as scheduled. Establish a process to identify and review prescriptions intended to be shipped but which were not logged as being shipped. Implement an audit process to verify that orders are packaged correctly and have the correct patient's medications and their correct address. Consider using video recording at each station (e.g., production, verification, packing/shipping), so if the patient reports a discrepancy, video footage can be reviewed to identify what went wrong.

Use Appropriate, Tested Packing Materials to Keep Medications Stable

In some instances, the pharmacy does everything accurately when shipping the package, but the courier or delivery service makes an error. ISMP has received multiple reports of delivery drivers failing to correctly verify the patient's address and dropping off a package at the incorrect address. Sometimes this happens because two patients' house numbers are similar or they live on the same street or on a street with a similar name. Other delivery service errors may occur when delivery-related notes are overlooked. For example, a package note may state "please put by back door," but the delivery driver does not see or follow the instructions. Or, packages marked "signature required" are left without a signature.

Investigate if the pharmacy computer system can be enhanced to provide weather forecasts to determine appropriate shipping materials to ensure medication stability. One pharmacist shared that their pharmacy designates a staff person to identify the high and low temperatures for the next 24 hours and posts that information in a variety of places to inform staff as to the proper shipping supplies to use for orders. Establish standard processes for proper packing and shipping, including how to use appropriate packing products. Provide resources (e.g., checklists, diagrams) to help staff adhere to packing standards. Managers and leadership should periodically observe the packing process, and/or audit packed boxes waiting to be shipped to ensure the correct packing materials are being used.

Also, provide visual aids in the computer system, auxiliary labels, or other notification systems to indicate to staff when medications should be kept refrigerated, frozen, or at room temperature.

Work with the Courier or Delivery Service

If the pharmacy uses its own delivery personnel, educate the drivers to ask the patient (or the person accepting the package) to state the patient's name and address (or date of birth) and have the driver verify these two identifiers against the delivery information on the package label. Consider using automation to verify addresses—requiring the driver to enter and confirm the address in the system prior to delivery, scan a barcode to confirm the address, and/or use GPS location verification.

If you use a courier service, consider meeting with them to discuss issues and errors and implement risk-reductions strategies. Work with them to ensure staff are properly educated and competent.

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teach parents and caregivers how to use this product properly and safely. Prescriptions for Noxafil PowderMix should be marked for mandatory patient education. Explore using technology (e.g., register holds) to trigger mandatory patient education. Use the teach-back method to educate patients and/or caregivers on how to properly mix the medication, calculate and draw up the correct dose, and administer the medication. Provide patients and/or caregivers with a copy of the *Instructions for Use* (www.ismp.org/ext/1111).



Look-alike manufacturer bottles. There are a few generic medications marketed by Unichem Pharmaceuticals that are packaged in bottles with labels that make them look very similar. Recently, a pharmacist reported that bottles of allopurinol 100 mg (NDC 29300-0349-01), am**LODIP**ine 2.5 mg (NDC 29300-0396-19), and amitriptyline 10 mg (NDC 29300-0419-01) look alike. They are in similar sized bottles and have container labels that use the same color and design, including using the same color to highlight the drugs' strengths (**Figure 1**). In addition, these medications may be stored alphabetically near one another on pharmacy shelves, which is how the reporter found them.

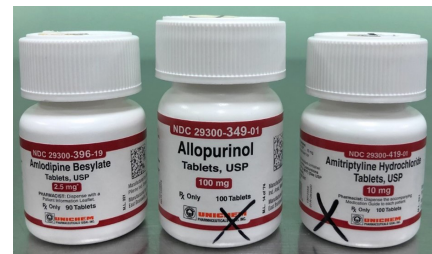


Figure 1. Look-alike bottles of am**LODIP**ine, allopurinol, and amitriptyline from Unichem Pharmaceuticals.

Explore purchasing some of these medications from different manufacturers. If you separate these items on pharmacy shelves, make sure staff are aware that they have been moved. Ensure barcode scanning is utilized during production to intercept selection errors.



Wrong label placed on antibiotic. A pediatric patient was prescribed amoxicillin oral suspension. To fill the prescription, the

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At the time of pick-up from the pharmacy, verify the packages to be delivered with the courier driver. One pharmacy shared that when the courier driver arrives at the pharmacy, they request the packages to be delivered by reading out two identifiers (e.g., name, address). Courier drivers should then use two patient identifiers to confirm delivery when the package is delivered in person, or double check the delivery address when leaving the package. Ideally, the courier driver should take a picture of the package at the delivery location to document where it was delivered. One pharmacist mentioned that if a patient is not home to receive a package, the courier returns it to the pharmacy to ensure chain of custody and proper storage. Also, if the patient provided specific delivery instructions, ensure that these instructions are readily visible to the courier or pharmacy delivery person.

Staff Education

Educate and orient staff regarding their role in setting up orders and preparing packages for delivery. Train staff in the risks and challenges with shipping and delivering medication as well as the common error types that may occur. Consider creating a shipping process flow sheet with images and diagrams to use as a resource for pharmacy staff.

Quality Control

Track and analyze packing- and shipping-related complaints, delays, and errors. For those that originate in the pharmacy, implement system-based risk-reduction strategies that target improvements in the packing and shipping process. Address with the delivery company all complaints and errors that originate with the delivery service.

Manufacturers Should Complete Temperature Stability Studies

To help support and facilitate proper shipping of medications and to waste of medications, manufacturers should conduct ongoing temperature stability studies and make findings readily available to practitioners (e.g., updating the prescribing information). For example, sometimes a medication delivery may be delayed by a few hours, but there is no data whether the medication is stable with a short-term temperature excursion. As a result, the medication may be considered to be spoiled and be wasted. Manufacturers should consider how to extend the stability of their products to make sure it is compatible with some short-term excursions that are inevitable in the shipping process. One example of a manufacturer who is providing additional stability data is AbbVie, who maintains a temperature excursion tool for healthcare practitioners (www.ismp.org/ext/1187).

Conclusion

Shipping and delivering medications is becoming more common for pharmacies. They now have the added responsibility to ensure the correct order arrives safely and on time to the patient. Pharmacies should take a proactive approach and layer the recommended strategies outlined in this article to address shipping- and delivery-related issues. Thanks again to those practitioners who shared strategies to help develop this article.

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pharmacy dispensed two bottles of the antibiotic. One bottle was labeled correctly; however, a label for doxycycline 100 mg capsules for another patient's prescription was affixed to the second bottle of amoxicillin. The patient's parent discovered the error when they arrived home.

Implement a standard workflow process to ensure pharmacy staff generate prescription labels for one patient at a time and then fill that patient's prescription(s) before printing labels for or working on another patient's prescription(s). Utilize barcode scanning during production to accurately match prescription labels to medications. At verification, barcode scan and visually inspect each dispensed bottle with an affixed pharmacy label to ensure it is the correct medication for the correct patient. At the point-of-sale, review the pharmacy labels and contents of each prescription container with the parent, caregiver, and/or patient to ensure that the patient's name and medications are correct. Periodically perform quality control checks by observing the barcode scanning processes.

Special Announcements

Nominations open for CHEERS Awards

Each year, ISMP honors various healthcare disciplines that have demonstrated an exemplary commitment to medication safety through innovative projects with an ISMP **CHEERS Award**. Nominations for this year's **CHEERS Awards** are now open and will be accepted through **August 6, 2023**. Please refer to the information provided on our website when submitting a nomination. For details, visit: www.ismp.org/node/123.

Quarterly ISMP Resources and Services Highlights

What does ISMP have to offer you? Check out our quarterly highlighted educational webinars and workshops, professional development opportunities, and **FREE** medication safety tools. The spring edition is now available as a convenient webpage, visit: www.ismp.org/node/61994.

NEW FOR COMMUNITY PHARMACIES

ISMP Foundations in Medication Safety: Community Pharmacy

Ensure your staff have the know-how to avoid risks and enhance the customer experience! ISMP's new online educational program teaches the basics not learned in professional school, but necessary to prevent medication-related events and is targeted specifically for community pharmacists and pharmacy technicians.

Foundations in Medication Safety provides:

- Standardized, essential training in key medication safety concepts
- Active learning using real case scenarios
- Dashboard to track staff participation and completion
- A cost-effective method to enhance internal CQI efforts and meet regulatory requirements



The program is available by organizational subscription only. For more, visit:

[ismp.org/node/76167](https://www.ismp.org/node/76167)