



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, the following selected agenda items have been prepared for you and your staff to stimulate discussion and collaborative action to reduce the risk of medication errors. These agenda topics appeared in the *ISMP Medication Safety Alert!* Community/Ambulatory Care Edition between July 2007 and December 2007. Each item includes a brief description of the medication safety problem, recommendations to reduce the risk of errors, and the issue number to locate additional information as desired.

Issue No.	Problem	Recommendation	Organization Assessment	Action Required/Assignment	Date Completed
<b>Patient counseling with original Rx</b>					
7	A labeling mistake that would have resulted in a significant under-dose of <b>VICODIN</b> (hydrocodone and acetaminophen) was discovered during a patient counseling session. Poor penmanship on the part of the prescriber contributed to "qd6t" being interpreted as "qd."	Use patient counseling sessions as a final check of prescription accuracy. Knowledge of typical Vicodin dosing and the practice of patient counseling using the original prescription allowed a second pharmacist to discern this error and take corrective action before the prescription was dispensed.			
<b>Is this how I administer my Symlin?</b>					
7	Confusion regularly occurs when patients must convert <b>SYMLIN</b> (pramlintide acetate)—dosed in micrograms—into units in order to administer Symlin using a manufacturer-recommended U-100 insulin syringe. Recently, a patient nearly administered a 6-fold overdose of Symlin before consulting his community pharmacist for dose confirmation. Failure to validate patient learning contributed to the near miss.	When complex dose conversion is necessary, patients must receive thorough instructions and provide healthcare providers with a "teach back." Symlin teaching should include: the prescribed dose; information about how and when to adjust Symlin doses; converting a dose from mcg to units; how to use an insulin syringe to draw up the correct dose; administration times; how to administer a dose; when to measure blood glucose levels; and blood glucose values to report to the prescriber. The newly approved Symlin pen-injector device may eliminate this problem.			
<b>Dose countdown misleading</b>					
10	The numbers visible in the dose indicator window in <b>Pulmicort Flexhaler</b> (budesonide inhalation powder) provide confusing information to patients. The dial is labeled in increments of 20, and actual movement of the dose-counter may not be discernable. Patients may have difficulty telling if a dose has been received.	Patients who use Pulmicort Flexhaler should receive explicit instructions about how to actuate the device, the slow-moving design of the dose counter, and how to tell when the device is empty. The manufacturer will provide tear sheets and updated information on the Pulmicort Flexhaler website once patient instruction revisions are approved by FDA.			

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<b>Patient confused by insulin pen design</b>					
11	A patient received a three-fold overdose of insulin (which resulted in an emergency department visit) when he misunderstood how to use the <b>SoloStar</b> insulin delivery device. Pen devices may not have features—such as the ability to see the plunger moving—that patients rely on to tell if a dose has been given.	Patients who are accustomed to using insulin syringes need to be educated when insulin pen devices are prescribed. Nurses who provide diabetes education, and dispensing pharmacists, should verify the patient understands how to use insulin pen devices and should observe a return demonstration to validate learning. An instructional video describing SoloStar is available at <a href="http://www.ismp.org/sc?k=lanthus">www.ismp.org/sc?k=lanthus</a> .			
<b>Scanning inconsistencies</b>					
9	Two formulations of <b>BYETTA</b> (exenatide) are distributed in pen injectors, one delivering 5 mcg/injection and one delivering 10 mcg/injection. The wrong strength may be dispensed because both pens have similar NDC numbers. Only the final two digits of the NDC numbers are different which may not be read by certain barcode scanning programs.	Manual double-checks of Byetta products, to include the entire NDC number, are warranted to ensure the correct strength is dispensed, especially in community settings where erroneous dispensing could lead to repeated dosing errors.			
<b>NDC Product Codes: The same “middle four” does not mean equal</b>					
8	ISMP has received reports that indicate different manufacturers are using identical or very similar product codes (the middle four numbers in the NDC number) for different products. This has resulted in numerous dispensing errors.	Pharmacies should: ensure the complete NDC number is used when product selection is verified and include NDC numbers as part of a pre-purchase failure modes and effects analysis when adding new products to stock.			
<b>Humulin R Concentrate U-500</b>					
8	ISMP receives regular reports of erroneous orders for insulin U-500 instead of the intended U-100. The way insulin products are listed on computerized order-entry screens often causes confusion. Ready access to concentrated insulin increases the likelihood of inadvertent overdose if clinicians are not aware that various concentrations exist.	Evaluate how insulin is listed on order entry and product selection screens. Partner with your software vendor to determine the best way to distinguish insulin products (adding “CONCENTRATED” to U-500 insulin entries has been proposed to major vendors). Consider adding a hard stop on U-500 insulin orders and require prescriber and pharmacist verification before proceeding. Segregate insulin products and ensure that front-line staff knows about the potential for mix-up.			

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<b>Lantus – Apidra Mix-up</b>					
8	A patient reported an error in which he inadvertently administered rapid-acting <b>APIDRA</b> (insulin glulisine [rDNA origin]) instead of the intended long-acting <b>LANTUS</b> (insulin glargine [rDNA origin]). The similar appearance of the vials contributed to the error.	ISMP notified sanofi-aventis, the manufacturer of these products, and asked them to investigate ways to better differentiate these insulin products. In the meantime, patients should consider applying a distinctive mark—such as a bold black line—to one bottle of similarly packaged insulin products or purchase one product of a look-alike pair from a different manufacturer.			
<b>Humira Pen and HumaPen</b>					
9	<b>HUMIRA PEN</b> (adalimumab) is an existing product used to treat immune-system disorders. A sound-alike product, <b>HUMAPEN</b> , used to administer Lilly's insulin <b>HUMALOG</b> (lispro injection [rDNA origin]), has been introduced recently.	Communicate these potentially confused, sound-alike products to frontline pharmacy staff. Before dispensing these drugs and devices, personnel should match the indication for use with the patient's condition as a double check.			
<b>Materna – Matulane mix-up</b>					
10	A tragic case was reported in the news in which <b>MATULANE</b> (procarbazine), used to treat Hodgkin's disease, was dispensed to a pregnant woman instead of the ordered prenatal vitamin, <b>MATERNA</b> . Matulane is the only brand name drug in the U.S. that begins with "MAT" so confusion may arise whenever Materna queries are entered into pharmacy systems.	Materna is no longer available in the U.S., but pharmacy personnel should be alert for prescriptions written for this product as it may be considered a generic term for prenatal vitamins. Consider requiring the full drug name ("Matulane") to be typed into the system before this choice is displayed. Check the indication for new prescriptions with the patient profile or the patient and maximize patient counseling when high-alert drugs are dispensed.			
<b>Sound-alike names</b>					
12	During a patient counseling session, a pharmacist realized that he had nearly dispensed <b>PROGRAF</b> (tacrolimus) instead of <b>PROZAC</b> (fluoxetine). Sound-alike drug names communicated over the telephone contributed to the near-miss.	Repeating and verifying drug information communicated by telephone may help prevent this type of error. Patient counseling sessions that include reviewing the indication for therapy and the prescribed medication give pharmacists the opportunity to catch errors before harm occurs.			

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<b>Using suffixes where suffixes don't exist</b>					
7	An error that could have resulted in a significant harm-causing opioid overdose was reported. The use of "IR" ( to mean immediate release) was added to <b>OPANA</b> (oxymorphone). The pharmacist interpreted the "IR" to be "ER," the common suffix used to indicate the extended-release product.	Prescribers should use a suffix to differentiate a product only when this designation is linked to a specific product and represents the FDA-approved name for the prescribed agent. When confronted with a non-standard or unrecognizable suffix, pharmacists should verify the intended product and dose with the prescriber.			
<b>We can do better</b>					
8	A patient reported being very dissatisfied with the way his community pharmacist responded when a dispensing error resulted in nearly 30 days of erroneous therapy. Unfortunately, this pharmacist's sense of infallibility contributed to the original error, and the perception that she was uncaring impeded an appropriate apology and service recovery actions when the error was discovered.	Investigate patient concerns when prescriptions are picked up; use patient counseling sessions as a final check of prescription accuracy. Schools and employers should provide education to pharmacists to ensure they possess requisite knowledge and skills to respond when errors occur. Conveying sympathy, preserving relationships, and fostering trust should be seen as appropriate professional actions in the aftermath of an error.			
<b>Electronically-generated prescriptions: An Rx for E-ror?</b>					
12	Use of electronically-generated prescriptions may lead to unintended consequences that impair prescribing safety. Problems with misspelled drug names, the use of error-prone abbreviations, and pre-programmed "sigs" that conflict with manually entered special instructions must be addressed.	Pharmacists should communicate deficits—such as trailing zeros, Latin abbreviations, and confusing information—found in electronically-generated prescriptions with prescribers, vendors, and ISMP so we can inform others and advocate for change by vendors. Seeing prescription problems that arise through real-time use of the system allows prescribers to adapt how they use the system and can drive software changes.			
<b>FDA and Cephalon issue warnings about FENTORA</b>					
9	<b>FENTORA</b> (fentanyl transmucosal buccal tablets) use has been linked to serious adverse outcomes when prescribed for patients who are not already opiate-tolerant. Patients must be selected carefully and prescribed doses customized to ensure safe use.	Prescribers, and pharmacists who double check dosages, are cautioned that mcg-to-mcg conversions are not appropriate when converting patients from other fentanyl products, including <b>ACTIQ</b> (fentanyl transmucosal lozenges).			