

ISMP Quarterly 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, the following selected items from the October-December 2005 *ISMP Medication Safety Alert!*[®] have been prepared for an interdisciplinary committee to stimulate discussion and action to reduce the risk of medication errors. Each item includes a description of the medication safety problem, recommendations to reduce the risk of errors, and the issue number to locate additional information as desired. The items with the highest priority appear at the beginning half of the agenda. Many product-related problems can also be visualized in the *ISMP Medication Safety Alert!*[®] section of our website at www.ismp.org. Continuing education credit is available for pharmacists and nurses at: www.ismp.org/Newsletters/acutecare/actionagendas.asp.

Issue No.	Problem	Recommendation	Organization Assessment	Action Required/Assignment	Date Completed
DIPRIVAN (propofol) sedation					
(22)	Several recent error reports reemphasize that propofol can be dangerous, even deadly, in untrained hands. Product labeling notes that the drug should only be given by persons trained in the administration of general anesthesia and not someone directly involved in the procedure itself. Patients can experience unpredictable and profound effects rapidly, but there is no reversal agent.	An interdisciplinary team, including the chair of anesthesia, should establish practice guidelines for the administration of propofol (or other induction agents such as thiopental, methohexital, or etomidate) to nonventilated patients undergoing surgical or diagnostic procedures. See the full article for guidance.			
Preventing magnesium toxicity in obstetrics					
(21)	Overdoses of magnesium sulfate have caused respiratory arrest and/or death of obstetrical patients, most often due to unfamiliarity with safe dosage ranges and signs of toxicity, inadequate patient monitoring, pump programming errors, duplicate loading doses, and mix-ups between magnesium sulfate and other IV solutions, mostly oxytocin.	Establish protocols and order sets for magnesium sulfate infusions using a standard concentration of premixed solutions. A concentration of 20 grams in 500 mL rather than 40 grams in 1,000 mL is recommended to minimize potential toxicity if a free-flow incident occurs. Label the IV tubing near the pump. Require an independent double check of the drug, concentration, pump settings, line attachment, and patient before administration. Physically trace the tubing from the bag to the patient for verification. Frequently monitor patients and fetal heart rates, and assess for signs of toxicity.			
Sterile water and 23.4% sodium chloride					
(20)	A neonate died after receiving arterial solution compounded with 23.4% sodium chloride instead of sterile water. The 250 mL bottles had been stored together in a pass-through cabinet with the labels facing away from the IV clean room. The error was not noticed because the pharmacy label had been placed over the manufacturer's label. An inline monitoring device alarmed several times, but the error was not noticed until the monitor displayed a sodium level of 190 mmol/L.	Store concentrated electrolytes away from other drug supplies. When possible, test the base solution used for compounded products using refractometry or other measurement/quality control device. Never assume that equipment malfunction alone is causing an abnormal clinical finding; this can delay rescue from harm. Never cover the manufacturer's label with the patient label.			

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Tetanus toxoid and purified protein derivative					
(25)	Twenty-seven firefighters were tested for tuberculosis using tetanus toxoid instead of purified protein derivative, due to remarkably similar packaging of these two products. Ten firefighters developed induration and erythema, leading to detection of the error. During the past 2½ years, similar errors have happened to hundreds of people, sometimes leading to unnecessary prophylaxis with isoniazid.	FDA recently approved label changes for the two products, as submitted by their manufacturer sanofi-pasteur, which will hopefully reduce the risk of mix-ups. Until then, please keep these two products segregated and add auxiliary labels to help differentiate them.			
Deltec IV tubing and FLOLAN (epoprostenol) interruption					
(20)	Tubing that connects a Deltec pump's drug cassette to the patient's IV access allows one-way flow. Inadvertently connecting the wrong end of this tubing to the infusion pump stops the flow of solutions. If the patient is receiving epoprostenol, any interruption in flow can cause severe worsening of pulmonary hypertension, and even death, in minutes.	Have pharmacy dispense administration sets with Flolan that are labeled on the distal and proximal ends as "cassette connection" and "patient connection," respectively.			
Medtronic SynchroMed pump fatal injection					
(25)	Another fatal overdose occurred after accidental intrathecal injection of concentrated morphine while refilling an implanted SynchroMed pump. The template in the refill kit helps to locate the reservoir port, but a similarly packaged catheter access kit and template were used instead. The templates are not labeled as "refill" or "catheter access," nor do they display warnings against accidental injection into the wrong port.	If you use these devices, conduct a failure mode and effects analysis to determine error potential. Create standardized order sets for refilling the pumps and include the applicable refill kit number. If possible, use devices with only a reservoir port, not a catheter access port. If pumps with catheter access ports are necessary, add auxiliary warning labels and keep them separated from refill kits.			
Abbott Diabetes Care glucose meter problem					
(24)	Several blood glucose meters from Abbott (FreeStyle, FreeStyle Flash, FreeStyle Tracker, Precision Xtra, Precision Sof-Tact, Optium, MediSense, and private label brands ReliOn, Ultima, Rite Aid, and Kroger) have unknowingly displayed a change in the unit of measure from mg/dL (used in the US) to mmol/L (used in other countries) after user manipulation, being dropped, or after replacing the battery.	Check that all meters display the glucose reading in mg/dL. Attach reminders to the devices or post reminders on nursing units. Alert nurses that any blood glucose reading below 20 means the measurement is in mmol/L; the meters do not read below 20 mg/dL.			

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NOVOLOG MIX 70/30 (70% insulin aspart protamine suspension, 30% insulin aspart injection) and NOVOLOG (insulin aspart injection)					
(21)	To reduce mix-ups between NovoLog Mix 70/30 and NovoLog, the company (Novo Nordisk) changed the NovoLog packaging. However, errors caused by name similarity between NovoLog Mix 70/30 and Novolin 70/30 will likely continue.	Consider limiting the insulin analog 70/30 mixtures on the formulary to a single product. If both Novo Nordisk products must be on the formulary, accentuate the differences in the products' names by using tall man letters (e.g., NovoLIN, NovoLOG MIX) or circling/underlining the differences.			
Phenytoin and phenobarbital					
(23)	Baxter changed the color of phenytoin vial labels from orange to green to prevent mix-ups with heparin vials. Now the phenytoin vials look like phenobarbital vials. Both drugs may be used to treat status epilepticus. While we have not received reports of actual errors, such an error could cause harm.	Baxter will be changing the color of the phenobarbital label to purple. Until then, you might want to purchase one of the products from another manufacturer. If both are in stock, separate their storage and place each vial in a ziplock bag with prominent auxiliary labeling and a warning about look-alike potential.			
The V.A.C. INSTILL SYSTEM and IV misconnections					
(20)	The V.A.C. Instill System by KCI accommodates IV tubing to deliver topical solutions to wound sites, risking unintended attachment of the V.A.C. tubing to an IV port. While very different from an infusion pump, the device also lacks protection from gravity free-flow, adding to the risk of harm if a misconnection occurs.	Prepare topical solutions in a 500 mL bottle so they look different than typical IV solutions. Misconnections are also less likely if you label all lines; affix cautionary labels to topical solutions; physically trace all lines from the source solution to the port of insertion; and require an independent double check before administration.			
Daptomycin (CUBICIN) and dactinomycin (COSMEGEN)					
(24)	While processing an order for daptomycin, a pharmacist typed "DA" into the system and accidentally selected dactinomycin. She didn't notice the discrepancy on the pharmacy label and actually prepared the correct drug. The error was noticed during review of antibiotic usage.	Before dispensing a product, verify the drug and label using the original order. If possible, build name alerts in the computer and list both brand and generic names, making the brand name primary. Use tall man letters to enhance recognition of generic names (DAPTOmycin, DACTINOmycin). Always verify the patient's diagnosis before dispensing these products.			
TUSSIONEX suspension (hydrocodone, chlorpheniramine) given IV					
(24)	Tussionex suspension was dispensed in an oral syringe, but the pharmacy label covered the manufacturer's warning: "For oral use only." A new nurse who was not familiar with oral syringes transferred the drug into a parenteral syringe and gave it IV.	Never cover important information with pharmacy labels. Consider affixing auxiliary "For oral use only" labels to the syringe plunger when dispensing oral solutions in oral syringes. Educate all new staff about oral syringes and their value in protecting against inadvertent IV administration.			

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Chemical burns with phenol					
(20)	A 3-year-old child attempted to drink a cup of phenol left on the counter of an exam room. The chemical spilled down the child's face and chest, causing skin burns and the need for an endoscopy and bronchoscopy to rule out further damage.	If possible, supply unit-dose phenol applicator kits (from Apdyne) to reduce the risk of unintended exposure to this harsh chemical. Childproof exam rooms to protect children from this and other chemical exposures.			
OMACOR (omega-3-acid ethyl esters) and AMICAR (aminocaproic acid)					
(22, 24)	A telephone order for Omacor was misheard as Amicar and dispensed to a patient. Both drugs are available in a 1 gram oral dosage strength. Mix-ups could be harmful; this patient caught the error after reading the drug information sheet.	If one or both drugs are available in your facility, set a look-alike alert in the computer system, match the drug's indication to the patient's diagnosis before dispensing either drug, and use tall man letters to express the drug names (OMacOR and AMicAR).			
COUMADIN (warfarin) and CARDURA (doxazosin) mix-ups					
(20)	A handwritten order for Cardura 1 mg HS was misinterpreted and dispensed as Coumadin. Both drugs are available in 1 mg, 2 mg, and 4 mg tablets and are generally administered once daily.	Encourage prescribers to include the medication's purpose on all prescriptions. If the purpose is not listed, verify the drug's indication before dispensing or administering a high-alert medication such as warfarin. Consider a pop-up alert when Cardura or relevant sizes of Coumadin are entered.			
MAALOX (aluminum-magnesium hydroxide and simethicone) brand name extensions					
(22)	New Maalox Total Stomach Relief packaging looks virtually identical to regular Maalox, but it contains bismuth subsalicylate. One banner proclaims, "Great new look. Same great Maalox;" another states "Maximum Strength." Consumers may believe that the new product is the same as Maalox, but it just works better. Warnings about side effects and use by people who should avoid aspirin are easy to overlook.	Alert practitioners to this risk, especially since hospitals will be purchasing the products in look-alike bulk bottles; unit-dose containers have been discontinued. Patients should also be warned about brand name extensions and the need to check the active ingredients in products or ask a community pharmacist for help.			
Warning labels mixed up					
(21)	A warning label that said "For irrigation only" was mistakenly placed on a TPN bag. This label was stored next to a label that said "For intravenous use only." Labels for otic drops have also been mislabeled with "For use in the eye only."	Separate all the various "For _____ use only" labels in the pharmacy.			