ISMP QuarterlyActionAgenda

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 **January—March 2016** issues of the *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 brief description of the medication safety problem, a few recommendations to reduce the risk of errors, and the issue number to locate additional information as desired. Look for our high-alert medication icon under the issue number if the agenda item involves one or more medications on the **ISMP List of High-Alert Medications** (www.ismp.org/sc?id=479). The Action Agenda is also available for download in a Microsoft Word format (www.ismp.org/newsletters/acutecare/articles/ActionAgenda1602.doc) that allows expansion of the columns in the table designated for organizational documentation of an assessment, actions required, and assignments for each agenda item. Continuing education credit is available for nurses at: www.ismp.org/sc?id=480.

Key: ⚠ —**ISMP high-alert medication**

No.	Problem	Recommendation	Organization Assessment	Action Required/ Assignment	Date Completed
Antidotes, reversal agents, and rescue agents not readily available					
(3) ⚠	Some medications have a high potential to cause an adverse reaction if given at a high dose/overdose, or even at an appropriate dose (e.g., iron dextran). The reaction can be life-threatening, and immediate intervention is needed. For some drugs, an antidote, reversal agent, or rescue agent exists. ISMP has received reports of preventable deaths and serious harm due to a delay in administering an appropriate antidote, reversal agent, or rescue agent (e.g., **EPINEPH**rine for anaphylaxis).	Have standardized protocols and/or coupled order sets in place that permit the emergency administration of all appropriate antidotes, reversal agents, and rescue agents used in the facility. Have directions for use/administration readily available in all clinical areas where the antidotes, reversal agents, and rescue agents are used. Learn more about this **Targeted Medication Safety Best Practice** and others at: www.ismp.org/sc?id=1659.			
Intravenous (IV) fat emulsions (e.g., INTRALIPID, NUTRILIPID, LIPOSYN III) for nutrition need a filter					
(1) ⚠	A change in the package insert for nutritional fat emulsions indicates that a 1.2 micron filter should be used during administration, which could stop fat emboli, air emboli, microorganisms, and particulate matter from reaching the circulation. Keep in mind, some drug information resources or products with older labels may still state that filters are not needed, or that a filter of less than 1.2 micron pore size must be used.	Educate prescribers, pharmacists, and nurses involved with parenteral nutrition about the need to filter IV fat emulsions used for nutrition. Ensure practitioners have an adequate supply of the appropriate 1.2 micron filters. Review the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) parenteral nutrition safety consensus recommendations (*J Parenter Enteral Nutr*. 2014;38(3):296-333) for additional filter recommendations.			
Replace U-500 vials with new HUMULIN R U-500 KwikPen (insulin, regular, 500 units/mL)					

ISMP QuarterlyActionAgenda

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(1, 2) ⚠	No dedicated syringe is available to measure doses of U-500 insulin from a vial. Clinicians administering U-500 insulin must use a U-100 syringe or a tuberculin (TB) syringe, both of which risk confusion and serious errors when measuring doses. If using a U-100 syringe, the dose must be converted to the markings of a U-100 syringe, or if using a TB syringe, to the volume markings. Patient miscommunication of the actual insulin dose based on U-100 syringe markings or volume has also led to serious errors.	The US Food and Drug Administration has approved Humu**LIN** R U-500 KwikPen in a prefilled pen device. The pen holds 1,500 units, and the dose can be set in 5 unit increments. Hospitals should strongly consider using the U-500 pen to eliminate dose conversion problems. However, patients using U-500 insulin from a vial at home may still communicate their dose in U-100 syringe markings or volume, so always verify the dose and syringe/device used at home.			
Paregoric (anhydrous morphine 2 mg/5 mL) mislabeled as "opium tincture"					
(3) ⚠	Paregoric was recently reintroduced into the market after being unavailable for several years. However, the nomenclature "opium tincture, 2%" was mistakenly added by the manufacturer to the label along with "paregoric." Paregoric is NOT "opium tincture." A dose of 5 mL of paregoric delivers 2 mg of morphine; a dose of 5 mL of opium tincture (10 mg/mL) delivers 50 mg of morphine.	The manufacturer is in the process of relabeling this product as paregoric 2 mg/5 mL (0.4 mg/ mL). For now, add labels to the bottles so they are not confused with opium tincture.			
Five medication safety risks to manage in 2016 that might otherwise fall off the radar screen					
(2)	Some risks are painfully apparent while others lie dormant in the system until an error draws attention to them. Risks that may be overlooked include: 1) placing orders on the wrong patient's electronic health record; 2) nursing references that promote unnecessary dilution of IV push medications; 3) confusing a drug concentration as a dose; 4a) confusing the per liter electrolyte content on bags less than 1 liter as the per container amount; 4b) drawing more than one dose into a syringe; and 5) discharging patients who do not understand their medications.	1) Limit the number of patient records open at one encounter, and require re-entry of the patient's identification prior to prescribing; 2) conduct a survey to learn the extent and variability of dilution practices, and provide drugs in the strength or form desired to reduce unnecessary dilution; 3) list the drug name followed by the patient's dose on the first line of medication administration records, and the strength on the next line; 4a) pharmacists who calculate electrolyte quantities should seek out an independent double check; 4b) identify whether clinicians are drawing more than one dose into syringes, and provide prefilled or commercially available syringes with the exact doses needed; 5) initiate patient education about medications earlier in the hospital stay.			

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Five more medication safety risks to manage in 2016 that might otherwise fall off the radar screen					
(3)	Five additional medication safety risks that may go unnoticed include: 6) improper and unsafe vaccine storage due to temperature excursions and unsegregated storage conditions that have led to vial mix-ups (e.g., insulin, neuromuscular blockers); 7) poor quality lighting that leads to errors; 8) failure to disinfect ports when accessing needleless valves on IV sets; 9) IV practices based on inherited knowledge handed down from one practitioner to another; and 10) human resource-related policies that conflict with a Just Culture.	6) Store vaccines in stand-alone refrigeration units (not in combination-style units that refrigerate and freeze), and regularly monitor and record the temperature; separate vaccines into labeled bins; 7) use fluorescent cool-white lamps or compact fluorescent lamps in medication areas, following recommended illumination levels; 8) follow manufacturer-recommended disinfection protocols for needleless connectors; 9) teach all new pharmacy and nursing staff the standard processes associated with sterile compounding and IV drug administration to reduce variability; and 10) remove old, punitive policies that do not align with a Just Culture.			
Errors with two-component vaccine **MENVEO** (meningococcal groups A/C/Y, W-135 diphtheria conjugate vaccine)					
(4)	Menveo is supplied in two vials, one containing lyophilized powder and the other a liquid component, which must be mixed together prior to injection. A recent government analysis identified 390 reports involving more than 400 patients during the past 5 years where only one component of the vaccine was administered, usually the MenCYW-135 liquid component. Several patients received only the MenA lyophilized component, reconstituted with a "generic" diluent. Errors are serious because they leave people exposed to a potentially deadly disease.	To prevent these errors, more is needed than just staff education and carefully following instructions—the only strategies suggested in the government analysis. Manufacturers must improve the labeling and packaging of 2-component vaccines to distinguish each container and connect the two so their contents are administered together. Until then, keep two-component vaccines together if storage requirements do not differ. Clearly distinguish each component if the manufacturer's label could mislead staff into believing either is the vaccine itself. Require barcode scanning of both components prior to mixing and administration.			
Listing the strength of a product before the patient's dose leads to dosing errors					
(5) ⚠	The son of an elderly man gave his father a dose of **NOVOLOG** (insulin aspart) 100 units after misreading the pharmacy label, which stated, "insulin aspart 100 units/mL." He thought the strength was the dose, which has happened frequently. For example, in 2016 we wrote about a	Present medication orders in a manner that physicians, nurses, and patients anticipate seeing, with the drug name and the patient's dose side-by-side. Specifically, list the drug name, patient-specific dose, route, and frequency on the first line of the medication			

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	physician who ordered 100 units of **LANTUS** (insulin glargine) instead of 6 units, caused in large part by listing the concentration right next to the drug name on the first line, and then the patient's dose on the next line. The strength was mistaken as the dose.	administration record and patient medication lists, and the available concentration and any directions on how to prepare the dose below it.			
Confusion among "Depo-" medications leads to wrong drug, route, or strength/volume errors					
(6)	Several drugs are available with names that begin with the prefix "Depo-." Misadministration of these drugs by the IV route and confusing one Depo-medication with another has been reported frequently. Recently, **DEPO-PROVERA** (medroxy**PROGESTER**one acetate) and **DEPO-MEDROL** (methyl**PREDNIS**olone acetate) were mixed up; Depo-Medrol was administered IV instead of IM; and the volume/strength of **DEPO-TESTOSTERONE** (testosterone cypionate) vials was confused.	Recommendations to prevent potentially harmful mix-ups include: utilizing barcode scanning prior to stocking and administering these medications; limiting inventory to a single strength and vial size of Depo-Testosterone; utilizing auxiliary labels to indicate the route of administration; purchasing products in prefilled syringes to differentiate look-alike products; and utilizing tall man letters when expressing drug names. See the *FDA and ISMP List of Recommended Tall Man Letters* at: www.ismp.org/Tools/tallmanletters.pdf.			
Labeling of contents of VistaPharm potassium chloride oral solution 10% is misleading					
(5)	The strength of VistaPharm potassium chloride oral solution 10% unit dose cups is listed as 20 mEq per 15 mL, but the cups contain 30 mL, or 40 mEq. The total amount of drug in the cup is not listed.	Determine if these are available at your facility and make staff aware of the potential for error. Consider affixing an auxiliary label to clearly communicate the total contents in the cup, or purchase the product from a different manufacturer.			
Methylergonovine maleate and phytonadione (vitamin K1) mix-ups in obstetrics					
(3)	A newborn was accidently given methyl-ergonovine injection instead of phytonadione. The infant developed seizures and altered mental status requiring intensive care for several days. ISMP has also received reports of mix-ups between methylergonovine and hepatitis B vaccine, adult and neonatal ampules of phytonadione, and administration of methylergonovine to a newborn instead of the intended mother.	Separate newborn medications from those used for mothers in perinatal areas. If possible, give infant medications in an area separate from where medications are administered to mothers. Band infants with ID bracelets immediately after birth, and use barcode scanning to verify drug administration. Purchase neonatal phytonadione in prefilled syringes. Bring only the medications needed to the mother or infant's bedside.			

ISMP QuarterlyActionAgenda

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	Confusion with Mylan vecuronium bromide and vancomycin look-alike vial labels				
(4) ⚠	Unusual combinations of color and label graphics contribute to Mylan's vecuronium bromide 20 mg and vancomycin 1 g vials looking very similar, especially once the cap, which states, "Warning: Paralyzing Agent," is removed from the vecuronium vial. A mix-up could result in a significant (even fatal) error.	While reading the vial labels and using barcode verification are both important in preventing errors like this, we also recommend using another brand of one of these products with different container labeling to avoid confusion. Also, sequester the storage of neuromuscular blocking agents so they are not intermixed with other products.			
	rOPINIRole dispensed instead of risperi**DONE**				
(5)	A patient received r**OPINIR**ole 0.25 mg instead of risperi**DONE** 0.25 mg from the pharmacy. The error was later discovered when the dose of risperi**DONE** was increased to 0.5 mg. There is a long history of mix-ups between these drugs. Besides name similarity, other causes of confusion include similar strengths, dosage forms, and dosing intervals; proximity of storage; appearance of product names together in computer listings; and look-alike container labels.	Address the known causes of confusion. Include the purpose when prescribing either medication. Do not store these products near one another, and do not allow the drug names to appear sequentially on computer listings. Utilize tall man lettering for storage labels, computer listings, and hospital pharmacy labels.			
	Partially filled vials and syringes in sharps containers are a key source of drug diversion				
(5) ⚠	A nursing aide diverted opioids, for personal administration, that had been discarded in sharps containers. The aide had found an unlabeled syringe containing a clear solution in a biohazard box, injected the solution, and suffered immediate paralysis, respiratory arrest, and then death from what she thought was an opioid but was actually a neuromuscular blocking agent. One in every 10 healthcare professional is struggling with addiction. Drug diversion also puts patients at risk for suboptimal treatment.	Anticipate diversion and take steps to prevent and detect it. Recognize signs of impairment and establish an expectation to report suspected worker impairment and/or drug diversion. Secure controlled substances at all times. Use appropriate and secure containers for safe disposal of waste and sharps, and secure and track the containers. Minimize the need to waste partial doses by providing smaller unit doses to clinical units. Establish safe drug disposal practices for any remaining controlled substance in a single use vial, prefilled syringe, or fenta**NYL** patch. Regularly observe how staff manage and waste controlled substances.			