ISMP Medication Safety Alert! **Action** Agenda

ISMP 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 July - September 2018 issues of the *ISMP Medication Safety Alert!* have been prepared for leadership to use with an interdisciplinary committee or with frontline staff 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. 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/node/103). The Action Agenda is also available for download in a Microsoft Word format (www.ismp.org/node/1185) 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/nursing-ce.

Key: ⚠ — ISMP high-alert medication

Issue No.	Problem	Recommendation	Organization Assessment	Action Required/Assignment	Date Completed
Unintended delivery of residual rocuronium through intravenous (IV) tubing leads to adverse effects					
(15) ⚠	A patient was given IV **HYDRO**morphone after surgery through the same line used to administer rocuronium during the procedure. He quickly stopped breathing and lost consciousness. Anesthesia staff administered sugammadex to reverse the effects of the residual rocuronium in the tubing that had been administered with the **HYDRO**morphone.	When administering medications such as neuromuscular blocking agents, flush all residual drug from the tubing before the patient is extubated, or change the IV line. Confirm that this has happened at the point of patient handoff or transition in care. Also, flush all drugs administered IV so they reach the patient and do not linger in the IV line.			
Smart pump surveys reveal optimization challenges					
(7, 14)	Results of three recent ISMP surveys on smart infusion pumps provided a unique glimpse into the safety concerns and barriers with maximizing this technology. These included: significant limitations in pump capabilities; alarm fatigue; persistent deficiencies related to library use and updates, programming workflow, and secondary infusions; and barriers to pump data analysis, particularly limited expertise and time.	As organizations adopt bi-directional interoperability between smart pumps and the electronic health record (EHR), it is critical to ensure widespread activation of an up-to-date drug library, address alarm fatigue, and monitor basic metrics at least quarterly (e.g., number of alerts by patient care unit, drug, concentration limits; type of limit reached [soft/hard]). External resources are available to help with data analysis.			
Check for proper NUCALA (mepolizumab) dose preparation					
(18)	The Nucala label states "100 mg/vial," but each vial contains 144 mg, which includes overfill to facilitate dose preparation. The mismatch between the label and vial contents has led to numerous overdoses in which the entire amount in the vial was used for a 100 mg dose.	Educate staff about the risk of an overdose, and to refer to the prescribing information when preparing doses. Develop clear compounding instructions that emphasize the fact that only 1 mL should be withdrawn from the reconstituted vial for a 100 mg dose.			

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Strategies to prevent accidental daily methotrexate dosing must be implemented					
(16, 17) ⚠	Daily dosing of oral methotrexate for nononcologic indications continues to occur. A recent event involved inadvertent documentation of daily methotrexate on an admission medication history that was corrected during hospitalization. However, the home medication list, which was referenced to prescribe daily methotrexate upon discharge, was not corrected. Divided weekly doses, lack of patient education, and prescribing systems that do not require verification of the indication or default to a weekly dosing frequency also contribute to errors.	Ensure order entry systems default to a weekly dosing schedule (www.ismp.org/node/160, best practice 2). Require pharmacists to verify an oncologic indication for daily methotrexate orders. Educate patients and provide them with written instructions that specify a weekly schedule (www.ismp.org/ext/68). Update the patient's home medication list throughout the hospital stay. Create a daily list of orders and discharge prescriptions for oral methotrexate and require a pharmacist to verify the dose and frequency.			
Misconnections between IV and tracheostomy pilot balloon ports can result in fatal outcomes					
(19)	Errors in which intravenous (IV) tubing is connected to a tracheostomy pilot balloon port continue to occur. These misconnections have led to respiratory arrest and death. In a recent event, a nurse accidentally connected an IV antibiotic to the balloon port, which inflated the tracheostomy cuff, occluded the airway, and burst, causing fluid to enter the lungs, resulting in the patient going into respiratory arrest.	Evaluate products used in your organization that may lead to misconnections and take steps to mitigate the risk (see self-assessment tool at: www.ismp.org/ext/82). Affix line labels close to insertion sites, position pumps on the same side as the port, trace lines before connection, decrease the frequency of disconnecting and reconnecting tubing, and conduct independent double checks before administering certain high-alert medications.			
Caution when converting HYDROmorphone to fentaNYL					
(18) ⚠	Due to a **HYDRO**morphone shortage, a physician not familiar with fenta**NYL** dosing ordered fenta**NYL** 250 mcg IV push. A pharmacist verified the order and a nurse with access to a 250 mcg/5 mL vial in an automated dispensing cabinet (ADC) administered the dose as ordered. The patient arrested but survived after a dose of naloxone.	Develop an opioid conversion chart to guide equivalent dosing. Replace 250 mcg/5 mL fenta**NYL** vials with 100 mcg/2 mL vials in ADCs if appropriate. Add a high-dose alert during order entry and when removing vials containing 250 mcg or more from ADCs. Remove fenta**NYL** 250 mcg as a routine option in the order entry system; only allow it to be ordered through a procedural sedation order set.			

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Entire bottle (25 tablets) of sublingual nitroglycerin administered to a patient					
(15)	An inexperienced nurse administered the entire bottle of nitroglycerin tablets to a patient. She had scanned the bar-code on the bottle, which confirmed the correct medication without an alert. The new nurse was familiar with unit dose dispensing and thought the small bottle contained a single dose for the patient.	Include instructions to administer 1 tablet sublingually (with additional doses as prescribed) on the medication administration record and automated dispensing cabinet screens. Also place a flag label on the glass bottle with this information. Another option is putting the nitroglycerin vial in a plastic bag with a label listing the tablet strength and to administer just 1 tablet per dose.			
Confusion with the abbreviation "tPA," again					
(14) ⚠	A nurse calling the pharmacy about a STAT order for alteplase asked if the patient's "tPA" was ready. The pharmacist heard "TPN" and stated it was on its way since he was ready to deliver parenteral nutrition solutions. When the nurse called again, another pharmacist dispensed the "tPA" infusion but forgot to remove the bolus dose. This delay led to worsening of the patient's condition.	Avoid the abbreviations "tPA" or "TNK" in all forms of communication (e.g., verbal, electronic, paper) and refer to the drug only by its generic and/or brand name. Include the indication with orders. Issue an alert during order entry and on automated dispensing cabinet screens to remind staff to verify the indication.			
Results of recent high-alert medication survey lead to several changes for 2018					
(17) ⚠	According to a recent ISMP survey on high-alert medications in acute care settings, almost all inpatient settings maintain a facility-specific list but only two-thirds have special precautions in place to prevent errors with these drugs, a quarter of which were rated as somewhat or weakly effective. The medications that caused the most concern with regards to medication errors included anticoagulants, insulin, neuromuscular blocking agents, chemotherapy, and opioids.	The *ISMP List of High-Alert Medications in Acute Care Settings* was updated (e.g., narrowed oral hypoglycemics to sulfonylureas; removed IV radiocontrast agents; added all parenteral routes for promethazine). Review the updated list (www.ismp.org/node/103) to determine if changes are indicated on your list. Employ effective risk-reduction strategies, especially for anticoagulants, insulin, neuromuscular blocking agents, chemotherapy, and opioids. See the *ISMP Medication Safety Self Assessment for High-Alert Medications* (www.ismp.org/node/580) for assistance.			

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Imported potassium chloride injection products can lead to errors					
(16, 17) ⚠	Due to drug shortages, two imported potassium chloride injection products are available, one from Athenex Pharmaceuticals (Galenica Senese) and the other from La Jolla Pharmaceutical (Laboratoire Aguettant). The Galenica product comes in ampules without a barcode and the labels express the concentration as "2 mEq/mL (20 mEq/10 mL)," which does not comply with USP <7>. The Aguettant product comes in plastic ampules without a barcode and is labeled in French. The company is affixing a sticker to the carton which states that each ampule contains 20 mEq/10 mL; 0,15 g/mL = 2 mEq/mL; must be diluted before use.	Store and utilize these imported ampules only within the pharmacy. Be sure pharmacy staff are aware of the differences in how the drug strengths are expressed. Alternate procedures are needed to verify product identification since there is no barcode. Please see important prescribing information if you are using the Galenica (www.ismp.org/ext/71) or Aguettant (www.ismp.org/ext/79) product.			
Grifols HYPERRAB (rabies immune globulin [human]) 1 mL and 5 mL cartons and vials look alike					
(17)	The concentration of HyperRAB was recently changed from 150 units/mL to 300 units/mL so more product can be delivered to the affected area in less volume. The new product is supplied in 1 mL (child) and 5 mL (adult) single-use vials, but both come in a 5 mL capacity vial and have very similar labeling and packaging, risking mix-ups.	To prevent mix-ups, store the products apart from one another. Use auxiliary labels to differentiate the vials and always barcode scan the products during restocking and product selection.			
Mix-ups between concentrations of Baxter's DOBUTamine premixed bags					
(14) ⚠	The overwraps for all three concentrations (250 mg/250 mL [1,000 mcg/mL], 500 mg/250 mL [2,000 mcg/mL], 1,000 mg/250 mL [4,000 mcg/mL]) of Baxter's premixed **DOBUT**amine bags look nearly identical, leading to a stocking error which was noticed when new inventory was being placed into the storage bins.	Alert staff to the potential for mix-ups and place prominent warning labels where products are stored. Utilize barcode scanning when selecting and administering these products. ISMP has notified the manufacturer about this issue.			