

| **No.** | **Problem** | **Recommendation** | **Organization Assessment** | **Action Required/ Assignment** | **Date Completed** |
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| ISMP Targeted Medication Safety Best Practices (TMSBPs) for Hospitals 2018-2019  |
| (25)  | The ISMP 2018-2019 TMSBPs for Hospitals include 2 revised and 3 new practices (www.ismp.org/sc?id=1750). The new prac-tices include eliminating the prescribing of fenta**NYL** patches for opioid-naïve patients or acute pain, removing injectable pro-methazine from formularies, and proactive use of external risk and error information.  | ISMP encourages hospitals that have not implemented the 2016-2017 TMSBPs to do so as a priority, while implementing the new 2018–2019 best practices. Hospitals can compare their level of implementation of the 2014-2015 and the 2016-2017 TMSBPs to other hospitals via survey data available at: www.ismp.org/sc?id=3063. |   |  |  |
| Flow rate documentation errors with interoperable smart infusion pumps due to duplicate barcodes |
| (24)  | In a hospital with smart infusion pump interoperability, electronic documentation of an insulin infusion was being recorded intermittently at both 3 mL per hour (the correct rate) and 60 mL per hour. Investigation revealed that the pump channel barcode was associated with two *different* pump channels being used for two *different* patients. Both channels had been labeled with the same barcode after pump repair.  | If you have implemented or plan to implement bidirectional smart infusion pump interoperability, conduct an independent double check when affixing barcodes to pump channels, verify the serial numbers and barcodes when pumps have been returned after repair, and ensure that internal serial numbers and information technology (IT)-applied barcodes all match before pumps leave the IT department. |  |  |  |
| Damaged or dirty BD Alaris inter-unit interface (IUI) connectors can lead to device errors  |
| (24) | Alaris IUI connectors used to attach a pump channel to the PC unit (pump brain) or another channel can become dirty, cracked, or otherwise damaged, which can interrupt communication between the channel and the PC unit and cause errors or pump shutdown. | Cleaning instructions for the IUIs can be found at: www.ismp.org/sc?id= 3050, and an inspection tip sheet is available at: www.ismp.org/sc?id= 3049. Any dropped or damaged instruments should be sent to the biomedical engineering department for repair.  |  |  |  |
| Ensure all staff are using the drug library built into smart infusion pumps |
| (24)  | An anesthetist programmed a dexmed-etomidine infusion to deliver 0.15 mcg/kg/minute instead of mcg/kg/hour. Using a CareFusion Alaris smart pump, she selected “Guardrails Drugs” to program the infusion, but then chose the “DRUG CALC” function and entered the infusion rate instead of selecting the drug from the library. The pump did not indicate that the dose error reduction software (DERS) had not been activated.  | Educate smart pump users (including anesthesiologists and anesthetists) about proper programming and how to engage the drug library. Confirm staff understanding via annual competencies and monitor compliance with the drug library. Consider requiring an independent double check of high-alert medication infusions that require manual entry of custom concentrations (e.g., investigational drugs).  |  |  |  |
| Errors related to horizontal barcodes on curved surfaces and multiple barcodes on packages |
| (21, 22) | Pharmaceutical products are required to have a linear barcode, but pursuant to the Drug Supply Chain Security Act (DSCSA), many manufacturers are also including a 2-dimensional (2D) data matrix barcode. The presence of both linear and 2D data matrix barcodes can lead to confusion regarding which to scan, and the horizontal repositioning of linear barcodes around curved surfaces renders them unreadable.  | Alert staff to the new DSCSA requirement to include a 2D data matrix barcode on certain product labels, and advise them which barcode to scan. Establish a process for incorporating new barcodes into the information technology database and linking them to the correct products. For a resource on managing the challenges associated with barcode verification systems, visit: www.bcmaresources.com/. |  |  |  |
| Mix-up between protein C concentrate, human (CEPROTIN) and prothrombin complex concentrate, human (KCENTRA) |
| (22) | A patient received prothrombin com-plex concentrate, which stops bleeding, instead of protein C concentrate, which assists with anticoagulation. The physician thought PCC was an abbreviation for protein C concentrate, not prothrombin complex concentrate. | Avoid the use of abbreviations for drugs, including PCC. Instead, include the full name of the products, protein C concentrate, or Ceprotin, and prothrombin complex concentrate, or Kcentra.  |  |  |  |
| STABILOX canister in SIMPLIST syringe package mistaken as a vial  |
| (21)  | Simplist morphine syringe packages contain a StabilOx canister which improves product stability. A nurse called the pharmacy to ask how to use the “vial” (canister) in the package. | Educate nurses about the purpose of StabilOx canisters and instruct them to discard the canisters upon opening the packages.  |  |  |  |
| Texting of medical orders can compromise patient safety |
| (13, 23) | The debate regarding the texting of orders continues. Proponents have embraced the convenience and usefulness of texting orders. Still, results of an ISMP survey revealed high concern regarding potential risks associated with texted orders, such as data security, delays in carrying out orders, unintended autocorrections, misunderstood abbreviations, misspellings, incomplete orders, and patient misidentification.  | Establish and communicate policies to avoid the texting of medication orders. The texting of orders is currently prohibited by certain regulatory and accrediting agencies. Safety issues need to be identified and resolved through advanced technology along with the development of industry-wide clinical guidelines to ensure standardized, safe, and secure texting processes can be implemented.  |  |  |  |
| Misuse of standard insulin pen needles by patients at home after hospitalization  |
| (21)  | While hospital staff often use insulin pens with a safety needle that does not require removal of the needle cover prior to injection, patients often use a standard insulin pen needle at home, which has a needle cover that must be removed before injection. Some hospitalized patients who have been taught to inject insulin using a pen with a safety needle have tried to inject insulin at home without removing the needle cover on a standard needle, thus failing to administer the insulin. One patient developed ketoacidosis and died. | Teach patients how to administer the insulin with the pen they will be using at home and require a return demonstration. Verify which pen needle the patient will be using and tailor the training to that needle. Remind patients that a standard pen needle is different from what may have been used in the hospital. Review injection technique with the patient if blood glucose levels are elevated. A National Alert Network (NAN) communication offers further details (http://ismp.org/NAN/files/NAN -20171012.pdf).  |  |  |  |
| Improper use of the BD AUTOSHIELD DUO and NOVOFINE AUTOCOVER insulin pen safety needles |
| (22)  | A patient required 5 emergency department (ED) visits and a hospital admission for hyperglycemia and ketoacidosis caused by nursing home staff misuse of the BD AutoShield Duo insulin pen safety needle. Some staff did not press hard enough for the needle cover to retract, and others injected the insulin at an angle that did not allow the retraction mechanism to work. Similar problems are possible with the NovoFine Autocover safety needles.  | Educate staff about the proper use of insulin pens and safety needles. Include a requirement to look for the red indicator on the BD AutoShield Duo and NovoFine Autocover post-injection to ensure that the needle has retracted properly. Patients rarely use safety needles unless a caregiver is administering the insulin. If this is the case, also educate the caregivers about proper use of the pen and safety needles.  |  |  |  |
| Confusion with measuring the correct dose with a U-500 insulin pen |
| (25)  | A patient using a U-500 insulin pen showed a pharmacist how he turned the dose knob on the pen to “15” to deliver each prescribed dose of 75 units. He had previously used a U-100 syringe to measure each dose of U-500 insulin, stopping at the “15 units” marking on the syringe. But the U-500 pen delivers the actual dose dialed.  | Hospital staff should use U-500 insulin pens, or U-500 insulin syringes and vials, when measuring and administering U-500 insulin. For patients, perform a medication history on admission to determine whether they are using a U-500 insulin pen at home, or a vial and syringe, and tailor the education to the devices being used.  |  |  |  |
| Differentiating insulin types by touch and separate storage |
| (21)  | A visually impaired woman who uses both rapid-acting and long-acting insulin pens stored them both in the refrigerator. She accidentally administered 50 units of the rapid-acting insulin at night. She woke up at 4 a.m. with a blood glucose value of 50 mg/dL.  | Teach patients ways to differentiate insulin types by touch, such as applying adhesive tape or rubber bands to pens. Avoid storing insulin pens together; advise patients to keep long-acting insulins in the bedroom and rapid-acting insulins in the dining area.  |  |  |  |
| Compounding error with PROLASTIN-C (alpha1-proteinase inhibitor [a1-PI]) |
| (22)  | A patient prescribed IV Prolastin-C 7,000 mg received 8,379 mg due to a com-pounding error. Although the package insert indicates that each vial contains 1,000 mg, the actual amount in each vial was 1,197 mg. Seven vials were used for the dose, along with 20 mL of diluent for each vial (140 mL), when only 6 vials (7,182 mg) were needed.  | Before compounding, require pharmacy staff to check the actual amount of the active ingredients in any plasma-derived medication and calculate the volume needed. Develop clinical guidelines, order sets, and procedures to guide appropriate use. Only those with knowledge of plasma-derived products should prescribe these drugs. |  |  |  |
| Confusion between IV RITUXAN (riTUXimab) and subcutaneous RITUXAN HYCELA (riTUXimab and hyaluronidase) |
| (20)  | The hyaluronidase component of Rituxan Hycela allows subcutaneous delivery of ri**TUX**imab in volumes that might not otherwise be feasible. But the large volume of Rituxan Hycela may cause staff to believe that the drug should be administered intravenously (IV), which may lead to an overdose. Rituxan Hycela has also been mixed up with IV Rituxan.  | Educate staff about the two formulations and the recommended procedure for administering the large subcutaneous dose of Rituxan Hycela. Store these products in a way that will clearly indicate that they are different formulations. When dispensing Rituxan Hycela, include a warning, “For Subcutaneous Use Only.” |  |  |  |