

| Issue | Problem | Recommendation | Organization Assessment | Action Required/ Assignment | Date Completed |
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| Multifactorial causes of tacrolimus errors | | | | | |
| 08/17agenda safety icon-alert | Reported errors with tacrolimus have been caused by mix-ups between drug strengths that differ by a factor of 10, regular and extended-release formulations, and look-alike names; confusion when dispensing more than one strength for the patient’s dose; and compounding an oral liquid formulation. Also, the manufacturer’s label for **ASTAGRAF XL** “ONCE-DAILY” has been misinterpreted by patients as meaning take one capsule per dose, rather than following the directions on the prescription label. Some of the errors resulted in patient harm including organ rejection. | Standardize compounding concentrations and recipes (see A*SHP Compounded Oral Liquid Version 1.01* at: www.ismp.org/sc? id=2981). When expressing doses less than 1 mg, always include a leading zero. Display the brand names for extended-release formulations on drug ordering and verification screens. Avoid the use of the modifier “IR” for immediate-release products. Stock all available strengths that might be prescribed and use the simplest single strength or combination of strengths to match prescribed doses. Educate patients using “teach back” methods. |  |  |  |
| Reduce the risk of dispensing medications that have not be reconstituted accurately | | | | | |
| 05/17  agenda safety icon-alert | ISMP has received reports from consumers that oral suspensions were inappropriately mixed. In one case, a 3-year-old girl ran out of her cephalexin oral suspension in 7 days instead of the prescribed duration (10 days) despite following the provided dosing instruction. It was suspected that the incorrect amount of diluent was used to reconstitute the antibiotic. Inappropriately reconstituted medications can lead to adverse events including wrong doses and treatment failures. ISMP has also received reports of oral suspensions that were not reconstituted before they were dispensed to the patient. | Add a note or other distinct visual cue to the prescription receipt indicating that the product needs to be reconstituted. Explore ways to leverage technology at the point-of-sale to reduce the risk of dispensing a product that has not been reconstituted. Incorporate an independent double check of the volume of diluent measured for reconstitution prior to the actual reconstitution of the product. After the product is reconstituted, give the product to the pharmacist to counsel the patient, using the “teach back” method, on how to measure the medication. Provide the patient with an appropriate oral syringe or other metric measuring device that corresponds with the instructions for use. |  |  |  |
| Death due to pharmacy compounding error reinforces need for safety focus | | | | | |
| 06/17 | A lethal dose of baclofen suspension was administered to a child instead of tryptophan suspension due to a selection error during the compounding process. The ingredients were not independently verified prior to compounding the oral solution. The tryptophan and baclofen (used for topical preparations) were both supplied by the same manufacturer, with similarly designed labels, a white powder, and stored right next to each other. | Use ready-made products whenever possible. If compounding is necessary, ensure compliance with accepted standards (USP) and conduct an independent double check of all ingredients prior to mixing, using barcode technology to augment the process. Label chemicals used for compounding with unique item numbers and barcodes. Segregate compounding ingredients intended for a single route of administration. |  |  |  |
| TRESIBA (insulin degludec) U-200 pen and visually impaired patients | | | | | |
| 05/17  agenda safety icon-alert | A U-200 Tresiba pen was prescribed for a diabetic woman with severe macular degeneration and visual impairment. She previously administered her insulin dose using the U-100 **LANTUS** (insulin glargine) **SOLOSTAR** pen by counting the click for each unit as she turned the dial. However, for Tresiba U-200, each click represents 2 units rather than 1. By using the number of clicks to dial her dose, the woman inadvertently administered twice the prescribed amount. | Educate patients how to properly use an insulin pen device. Require a return demonstration to confirm their ability to use the device properly, especially visually impaired patients and any time a new device is prescribed. Make sure prescribers, certified diabetes educators, and pharmacists are aware of this potential problem. |  |  |  |
| Problems associated with prescribing U-500 insulin syringes | | | | | |
| 06/17  agenda safety icon-alert | Prescriber confusion led to the inappropriate prescribing of U-500 insulin syringes for outpatients taking U-100 insulin. In another organization, U-500 syringes were repeatedly prescribed in error via electronic systems because the “U-500” designation was to the far right of the entry and overlooked or not seen. | Assess how U-500 insulin syringes appear in your computer system, and consider moving the “U-500” designation to the left of the insulin syringe entry in prescribing systems. Educate practitioners to avoid using U-500 syringes to measure any insulin concentration other than U-500. Educate patients about the risk of a mix-up if multiple family members in the home use insulin with both U-500 and U-100 insulin syringes. Remind staff involved in medication reconciliation to be sure to find out what type of syringe (U-100, U-500, or tuberculin) U-500 patients are using when they state their dose. |  |  |  |
| Make sure to dispense pen needles with all insulin pens | | | | | |
| 06/17  agenda safety icon-alert | A diabetic patient was prescribed **HUMULIN R** (insulin regular concentrate) U-500 insulin pens with instructions to administer 140 units 3 times a day. The pharmacy dispensed the U-500 pens but did not dispense any pen needles, so the patient used her leftover U-100 syringes to draw her insulin dose from the U-500 insulin pen cartridge. The patient was found unresponsive, given dextrose, and taken to the hospital by emergency medical technicians, where she made a full recovery. | Build an alert for pharmacists to make sure that patients have the appropriate pen needles if an insulin pen is prescribed. The facility that reported this error is planning to give their ambulatory pharmacists authority to dispense pen needles without a prescription whenever they dispense insulin pens. It is critical for prescribers, nurses, and pharmacists to educate patients about the proper use of insulin pen devices, the importance of using the correct pen needle, and to never use the insulin pen cartridge as a vial. |  |  |  |
| Name mix-up: hydrOXYzine and hydrALAZINE | | | | | |
| 08/17 | A man with itching was given a computer-generated prescription for hydr**OXY**zine. A week later, still experiencing itching, the patient’s physician provided a prescription for a higher dose of hydr**OXY**zine. When comparing the first and second dispensed prescriptions, the man’s wife noticed the first prescription was hydr**ALAZINE**, an antihypertensive agent, and not hydr**OXY**zine. | Include the purpose of the medication on prescriptions. Encourage and enable pharmacists to discuss new therapies with patients to verify that the medication is appropriate. Verify the patient understands the new regimen. Work with computer system and drug information vendors to design, implement, and maximize the use of indication-based screening of prescriptions. |  |  |  |
| Improving prospective Drug Utilization Review (DUR) and medication safety | | | | | |
| 05/17 | In the article *Improving clinical decision support in pharmacy: toward the perfect DUR alert* ([www.ismp.org/sc?id=3022](http://www.ismp.org/sc?id=3022)), the authors make recommendations to improve the use of automated clinical decision support (CDS) tools that community pharmacies employ to help pharmacists identify potential drug therapy problems. Issues such as alert fatigue, limitations in checking prescriptions against a patient’s documented diagnoses, and limited access to real-time patient laboratory values are barriers to improved effectiveness. | Pharmacy organizations should enlist clinical staff to report inappropriate alerts. Create an expert committee within the organization to review questionable or frequently overridden alerts in order to customize the system and provide feedback to the database vendor. Educate pharmacists to use CDS tools; this training should be integrated into the curricula of pharmacy schools rather than being relegated to on-the-job training. Continuous quality improvement of prospective DUR should be the shared goal of all stakeholders. |  |  |  |