December 2023 | Volume 22 ■ Issue 12

ISMP
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Community/Ambulatory Care
ISMP Medication Safety Alert!®
Educating the Healthcare Community About Safe Medication Practices

ISMP 26TH ANNUAL CHEERS AWARDS

HITTING THE SAFETY HIGH NOTES

This month, ISMP celebrated the 26th annual **CHEERS AWARDS**, which recognize individuals, organizations, and groups that have demonstrated extraordinary commitment to advancing the science, study, and practice of medication safety. This year's winners were honored at an awards ceremony held on December 5, 2023, at the House of Blues in Anaheim, CA. Please join us in congratulating this impressive group of medication safety virtuosos, who have shown outstanding dedication to reducing adverse events and infection risks and supporting second victims of medication errors.

CHEERS AWARDS winners

Boston Medical Center was recognized for its implementation of barcode medication administration (BCMA) and positive patient identification (PPID) prior to administering any medication or vaccine in ambulatory care settings. One of the 2022-2023 ***ISMP Targeted Medication Safety Best Practices for Hospitals*** calls for expanding BCMA beyond inpatient areas. Boston Medical Center began to incorporate the technology into their general and family medicine clinics in early 2023, achieving a scanning compliance rate of 98%. However, the team realized there were still gaps in their process—ambulatory clinics. Here, patients were not receiving a patient identification band, so staff were still verbally verifying patient name and date of birth prior to medication administration. Both BCMA and PPID were implemented in the pediatric clinics to address this gap, and scanning compliance has been successful at 97%. This process has averted numerous close calls, particularly in the identification of the correct patient when siblings were in the same exam room and required immunizations. In addition, through a direct computer interface with the Massachusetts Immunization Information System, vaccine documentation is automatically being sent to the state registry, improving the accuracy of patients' vaccine records. Boston Medical Center's end goal is successful deployment of BCMA and PPID in all 45 of its ambulatory clinics that administer medication and vaccines.

Corewell Health in Grand Rapids, MI, was honored for eliminating inadvertent infection exposure of multi-use insulin pens in their organization by implementing the use of a patient-specific barcode on the pen to help prevent using it for multiple patients. After a gap analysis, a multidisciplinary team led by a physician assistant, a pharmacist, and an information technology analyst identified ways to prevent patient-to-patient exposures involving insulin pens. The team used a layered approach of low-, mid-, and high-level strategies over a period of three years. They built an additional layer of safety by developing an automated process in which patient-specific barcode labels are printed and applied to multi-use medications on the nursing unit. Printers were installed in each medication room and all formulary insulin pens were moved to the automated dispensing cabinet (ADC). Once insulin pens are removed from the ADC, a patient-specific label is applied before it leaves the room. Before administration, nurses scan the patient's wristband, patient-specific barcode on the pen, and the manufacturer's barcode. After all three scans are complete, the system allows them to proceed. Since implementation, Corewell Health has had zero patient exposures. They have shared their process at the state, local, and national levels and with Epic, who intends to include it in their software update in 2024.

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SAFETY briefs

Safeguard notification process when refrigerator temperatures deviate! Recently a refrigerator containing specialty medications went out of temperature range for at least four hours. When cold-chain medications are stored outside of recommended temperature ranges, the product's stability and efficacy may be compromised. Also, improper storage can lead to wasting the medication, which results in a significant financial loss to the specialty pharmacy. In this case, the specialty pharmacy team did not discover the temperature control failure until they retrieved a product to dispense from the impacted refrigerator. They realized the temperature was not where it should be. In response, the specialty pharmacy team dedicated resources to call drug manufacturers for each specialty medication in the refrigerator to obtain temperature excursion data to determine what, if any, of the medications could be saved.

In this case, the specialty pharmacy refrigerator was connected to a hospital-wide continuous monitoring system. While the hospital had a process in place to notify key staff when the refrigerator monitoring system was alarming, the specialty pharmacy team did not receive the notification. It was identified that this happened in part because the hospital notification system did not have current contact information for the specialty pharmacy staff who should receive the alerts.

Establish and/or review the pharmacy and hospital temperature monitoring notification system, including policies and processes. Create a standard process to regularly review and update key pharmacy and other contacts and their information. This includes specialty pharmacy staff, hospital staff, and hospital and pharmacy security. Consider incorporating prompts on new hire

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LIFETIME ACHIEVEMENT AWARD winner

The 2023 **LIFETIME ACHIEVEMENT AWARD**, which is given in memory of ISMP's late Trustee David Vogel, PharmD, honors individuals who have made ongoing contributions to medication safety throughout their career. This year's honoree, ***Susan Donnell Scott, PhD, RN, CPPS, FAAN***, has dedicated her career to developing strong peer support for clinicians and second victims of medication errors.

Dr. Scott's groundbreaking research has helped define the second victim phenomenon, and increased understanding of the unique needs of healthcare team members during the aftermath of unexpected clinical events. She designed and deployed a first-of-its-kind peer support network, the forYOU Team, at the University of Missouri Health Care System in Columbia, MO. This evidence-based and holistic approach to provision of institutional support, promotes the psychological safety of staff during the period of extreme stress following emotionally challenging clinical events, and has become an international model for healthcare organizations seeking to create their own support structure.

In addition to leading the forYOU Team, Dr. Scott practices as a nurse scientist at the University of Missouri Health Care System and is an adjunct associate professor at the Sinclair School of Nursing. She has partnered with other organizations, including the Agency for Healthcare Research and Quality, the American Hospital Association, The Joint Commission, the Institute for Healthcare Improvement, and Medically Induced Trauma Support Services to ensure that comprehensive second victim support interventions are accessible to healthcare organizations and practitioners around the world.

In her acceptance remarks, Dr. Scott emphasized that offering accessible and effective support for second victims should not be seen as a choice for staff, but an expected and consistent response. She called on organizations to address second victim experiences spanning the whole spectrum of severity, and to proactively nurture a supportive environment that considers the overall well-being of healthcare professionals. She noted that each individual possesses the power to contribute to this transformative vision, irrespective of position or title. Dr. Scott expressed optimism about the future that the entire healthcare community can collectively help shape, creating workplaces that cultivate innovation, inclusivity, kindness, and positive change.

Special Guest Speaker

This year's **CHEERS AWARDS** dinner also featured a special guest who has herself been a second victim—***RaDonda Vaught***, a former nurse criminally prosecuted for a fatal medication error. ISMP and many other healthcare organizations spoke out in support of RaDonda and against the criminalization of medication errors during her highly publicized trial and sentencing. In an onstage conversation with ISMP President Rita Jew, RaDonda shared her compelling story regarding the human side of medication-related mistakes and the impact of the error on everyone involved. She stressed how much ISMP and ECRI's public statement about her case meant to her, and ways she has found some closure. She touched on the systems that, if they had been in place, could have prevented the error and why she continues to feel that speaking up about issues, including medication error reporting, is essential for organizational learning.

Thanks, and Looking Forward

We would like to express our immense gratitude to all of the organizations and individuals who attended and/or supported this year's **CHEERS AWARDS**. For a list of contributors and winners, please visit: www.ismp.org/node/83407, and for ways you can join us in creating a brighter future for medication safety, please visit: www.ismp.org/support.

ISMP wishes everyone happy holidays, and we look forward to continuing to work together on preventing errors and keeping patients safe in 2024.

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or other onboarding checklists to update the notification system. This includes when internal staff are promoted to leadership or management roles. Incorporate an escalation cascade to an appropriate secondary contact if the designated contact does not respond to an alarm within a defined response time. Establish a testing protocol to ensure the notification system is working properly and alerts are reaching the identified key personnel. Schedule system tests on a regular (e.g., monthly, quarterly) cadence.

Problematic Tylenol packaging. We were recently alerted to potentially confusing packaging and labeling of a **TYLENOL** (acetaminophen) product. The manufacturer, Kenvue (formerly Johnson & Johnson Consumer), produces Tylenol in a variety of strengths, dosage forms, and packaging configurations. For example, they produce regular strength Tylenol 325 mg tablets and extra strength Tylenol 500 mg caplets. These dosage strengths do not overlap and thus have a reduced risk of confusion.

Figure 1. Tylenol 500 mg extra strength caplets are available in bottles containing 325 caplets. The number 325 is the strength of regular strength Tylenol tablets. There is a risk that patients may mistake this product as containing 325 mg of Tylenol instead of 500 mg, especially since the numbers are close to one another on the container label.

However, there is one package size of Tylenol 500 mg caplets that may create just such confusion. Extra strength Tylenol 500 mg is available in bottles that contain 325 caplets (**Figure 1**). This overlap in numbers between the strength of regular strength Tylenol and the number of caplets in the bottle of extra strength Tylenol is likely to cause confusion. Also, the placement of the numbers 325 and 500 on the container

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Take steps to prevent confusion with these names

Problem: Just recently, we received reports of events involving mix-ups of confused drug name pairs. In one case, meth**IMA**zole was dispensed and placed in a pharmacy vial labeled as methazol**AMIDE**. The patient was supposed to receive methazol**AMIDE** 50 mg tablets to treat glaucoma but instead received meth**IMA**zole 5 mg tablets which is typically used to treat hyperthyroidism. The error was discovered by an inpatient pharmacist when checking the medication that the patient had brought with them when admitted to the hospital. The patient had taken nearly the entire 90-day supply of the wrong medication. Also, the patient was taking levothyroxine, which is typically used to treat hypothyroidism, the opposite of the indication for meth**IMA**zole. This drug name pair (meth**IMA**zole—methazol**AMIDE**) is already included on the ***ISMP List of Confused Drug Names*** (www.ismp.org/node/102) and ***FDA and ISMP Lists of Look-Alike Drug Names with Recommended Tall Man Letters*** (www.ismp.org/node/136).

In another case, a pharmacy received an electronic prescription for terbutaline 2.5 mg with instructions "to compound into 25 mg/mL solution" and give "2.5 mL orally daily x 6 weeks" for a pediatric patient. The pharmacist questioned whether the correct drug had been prescribed. Terbutaline can be used orally to treat acute exacerbation of asthma in children who are at least 12 years old. The typical dose would be 2.5 mg to 5 mg three times a day based on the patient's age. However, the patient in this case was only 3 years old. Also, the duration of use, six weeks, was more consistent with the antifungal terbinafine than terbutaline. The pharmacist called the prescriber and confirmed that the intended medication was terbinafine.

In a third case, a prescriber intended to send a prescription for the antiseizure agent ethosuximide, but instead ordered the antitubercular agent ethionamide. It was identified that the drug names appeared next to each other on the electronic health record (EHR) screen as they both start with "eth-." Also, both products are available in 250 mg solid oral dosage forms. Fortunately, the patient's parent intercepted the error before the wrong medication was given.

Safe Practice Recommendations: Alert pharmacy staff and prescribers about the potential to mix up these medications. Prescribers should include the purpose of the drug in prescriptions. Use barcode scanning to prevent dispensing of the incorrect product. Implement a standard workflow process to ensure pharmacy staff generate prescription labels for one patient at a time and then fill that patient's prescription(s) before printing labels for or working on another patient's prescription(s). The medications in each of these name pairs share the same first three or four letters (i.e., eth-, meth-, and terb-). Consider configuring both the prescribing and pharmacy dispensing systems to require the entry of at least the first five characters of the drug name. However, keep in mind that there is no magic number regarding how many characters may be needed. It is best to keep typing letters until the intended drug name appears distinct by itself. Use of tall man letters can help differentiate similar drug names if practitioners are faced with a list of drug names. Explore ways to enhance the appearance of the tall man letters (e.g., bolding, highlighting, color) on computer screens. Educate patients to confirm that the correct medication has been dispensed by using the medication identification information included on many pharmacy labels. The name pairs terbinafine-terbutaline and ethionamide-ethosuximide will be added to the ***ISMP List of Confused Drug Names***.

Worth repeating...

Ensuring the safe use of automated dispensing technology

In the August 2021 issue of this newsletter, we described an error that occurred when a pharmacy refilled its automated dispensing technology (e.g., vial dispensing robot). The error occurred when topiramate 50 mg tablets were accidentally added to a cassette (or cell) containing tra**ZOD**one 50 mg tablets. The staff person refilling the cassette had retrieved what were thought to be two 500-count medication bottles of tra**ZOD**one 50 mg tablets from a storage shelf. However, one of the containers held topiramate 50 mg, not tra**ZOD**one. Both

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label only increases this risk of confusion—is this product Tylenol 325 mg or 500 mg? We have reached out to the manufacturer to ask them not to produce this package size to eliminate any potential confusion.

HIGH-ALERT

Fluorouracil cream—ensure formulation corresponds to indication. In a large health system, staff uncovered several prescribing errors related to confusion between the 0.5% and 5% strengths of fluorouracil cream. A pharmacist was reviewing a patient's prescription for fluorouracil cream 0.5% and saw that the prescriber added a note stating, "ordering 5%." The pharmacist clarified with the prescriber who confirmed that the patient required fluorouracil cream 5%. Fluorouracil cream 0.5% is indicated for the treatment of actinic or solar keratoses. It utilizes a porous microsphere delivery system with sustained-release characteristics so it is administered once daily. Fluorouracil cream 5% is approved for actinic keratoses and basal cell carcinoma and is administered twice daily.

This event prompted the health system to review several hundred previously dispensed fluorouracil cream prescriptions. In more than 20 cases, they found the 0.5% cream was ordered and dispensed for patients with cancer instead of the indicated 5% cream. A lower than intended dose for a cancer indication may result in suboptimal control of symptoms and disease progression.

Prescribers should include the purpose of the medication in the prescription. They should also ensure order sentences include the appropriate dosing frequency (e.g., once-daily, twice-daily) based on indication and automatically link the corresponding product (e.g., 0.5%, 5%). Coach prescribers to avoid using notes or order comments to modify the selected formulation (i.e., do not select the 0.5% strength with a note to dispense the 5% strength). Separate these formulations in storage locations and consider adding warning signs on storage bins to create awareness about the differences. Use barcode scanning prior to dispensing. Educate staff and patients

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medications were manufactured by Zydus Pharmaceuticals, and the bottles and tablets looked nearly identical. Also contributing to the selection error was the fact that one bottle had been sitting right behind the other where they were stored. Fortunately, before anyone received the wrong medication, a pharmacist caught the filling error while verifying a prescription for tra**ZOD**one 50 mg when they recognized that the two drugs appeared to be mixed together in the prescription vial.

In a recent case, **PAR**oxetine 20 mg tablets were found in a prescription bottle along with the prescribed promethazine 25 mg tablets. Upon investigation, it was determined that multiple bottles of **PAR**oxetine had been added to the robot's cell containing promethazine 25 mg. The pharmacy was in the process of adding additional technology, and as a result, the shelves were compacted and medications rearranged. The promethazine and **PAR**oxetine bottles looked similar and were beside each other on the shelf. Additional bottles of medications, behind the front-facing promethazine and **PAR**oxetine bottles, were likely mixed together. A pharmacy team member intended to grab multiple bottles of promethazine to refill the robot, but they mistakenly picked up bottles of both promethazine and **PAR**oxetine. The pharmacy determined that the original refilling error occurred about a month before it was discovered. All patients who potentially received the wrong medication were contacted and advised to return any remaining medication to the pharmacy and receive a new fill for promethazine.

While automated dispensing technology software commonly requires (or allows for) barcode scanning when adding medication to a cell, most only require the scanning of a single bottle. If multiple bottles are used to refill the cell, unless you scan each stock bottle individually, the technology can be bypassed by scanning just one bottle. That is, if you are trying to add 500 tablets and the medication comes in 100-count bottles, you can scan just one of the bottles and then pour the remaining four bottles (even if they are the incorrect medication) into the dispensing robot cell.

Since ISMP continues to receive error reports involving the refilling of automated dispensing technology, we thought it was ***Worth* repeating** strategies that can be implemented to reduce the risk of error. Pharmacies with robotic dispensing capabilities need to address situations in which multiple bottles of tablets are used to refill a cassette. Visual checks are important, but as described above, cannot be solely relied upon for proper identification of bottle contents. Check with your technology manufacturer to learn what is recommended to address situations in which multiple bottles are used to refill a cassette. Ideally, the filling process should require a scan of the barcode printed on the label of *each stock bottle* before it is added. Engage staff and establish standard work practices to barcode scan each stock bottle. Use only unopened stock bottles to ensure the national drug code (NDC) number, lot number, and expiration date match for all tablets. Complete the entire process of filling one cell before moving to the next cell and corresponding drug bottle(s). Restrict privileges to make modifications, adjustments, or changes in the bin contents of automated dispensing systems to properly trained staff members. Pharmacy managers and/or regional personnel for chain pharmacies should periodically perform quality control checks by observing the processes involving automation to ensure adherence to the standardized work practices. If at-risk behaviors, such as scanning only one bottle or scanning the same bottle twice, are observed, coach staff to see the potential for error and the importance of scanning each bottle.

Call to Action! We ask that you share with us any limitations or barriers you have experienced in the safe use of your automated dispensing technology, including limitations in the barcode scanning process. We would also like to learn about the strategies you and your technology vendor(s) have in place to reduce the risk of medication errors and ensure the correct drug is added to the correct cell. Finally, we would still like to learn more about your return-to-stock process for prescriptions dispensed by a robot. Please contact us at: medicationsafety@ecri.org.

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about the differences between fluorouracil 0.5% and 5% creams and the need to confirm the indication prior to dispensing. Warn patients to keep these products away from pets who may develop severe toxicity if they lick the owner's skin.

Verify patient ID and open the bag. Within the last few weeks, we have received multiple reports of patients receiving another patient's medication at the point-of-sale (POS). There are strategies we know that can help prevent these errors and we hope that you will implement them. Many of them are included in Best Practice #1 in the 2023-2024 ***ISMP Targeted Medication Safety Best Practices for Community Pharmacy*** (www.ismp.org/node/65345). Namely, pharmacies should use at least two identifiers (e.g., full patient name, date of birth, patient's address, patient's phone number) to verify the patient's identity with the patient or caregiver. Asking for the patient's photo identification (ID) is an additional option to include in the patient verification process. Have pharmacy staff compare the stated identifiers to either the prescription, pharmacy information system, or pharmacy label. Employ technological enhancements at the POS that require pharmacy staff to electronically verify the patient's identity before the register transaction can be completed. Review the pharmacy labels and contents of each prescription container with the patient to check that the patient's name and medications are correct.

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ISMP Medication *Safety Alert!* Community/Ambulatory Care (ISSN 1550-6290)

Report medication and vaccine errors to ISMP: Please call 1-800-FAIL-SAF(E), or visit www.ismp.org/report-medication-error. ISMP guarantees the confidentiality of information received and respects the reporters' wishes regarding the level of detail included in publications.

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Happy Holidays from the staff, Board of Directors, and Advisory Board at the Institute for Safe Medication Practices (ISMP). We wish you joy, health, and happiness this holiday season!

Special Recognition... Our 2023 Community/Ambulatory Clinical Advisory Board

Production of this peer-reviewed newsletter would not be possible without the assistance of a reliable and talented clinical advisory board. As 2023 nears an end, we want to thank each of the following members of the advisory board for their dedication to making this newsletter a valuable medication safety resource for clinicians.

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