MSOS Member Briefing
September 2023

MSOS Member Briefing
September 2023

Moderated by: E. Robert Feroli, PharmD, FASHP

MSOS
MEDICATION SAFETY OFFICERS SOCIETY

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Patient Safety Story and Best Practice: Sodium Chloride (4 mEq/mL) Oral Solution

PRESENTER: Rachelle Albay, PharmD, CPPS
Medication Safety, Kaiser Permanente National Pharmacy Services
AUDIENCE: Medication Safety Officers Society (MSOS)
DATE: September 28, 2023

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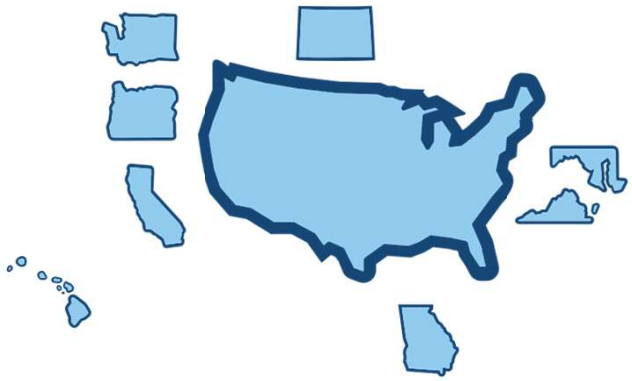
MSOS Member Briefing
September 2023

BACKGROUND: Kaiser Permanente (KP)

Kaiser Permanente exists to provide high-quality, affordable health care services and to improve the health of our members and the communities we serve.



Members	Hospitals	Medical offices[1]
12.5M	39	724

Physicians[2]	Nurses[3]	Employees[4]
23,597	63,847	216,776

- 500+ Pharmacies
  - ✓ **39+ Inpatient Pharmacies**

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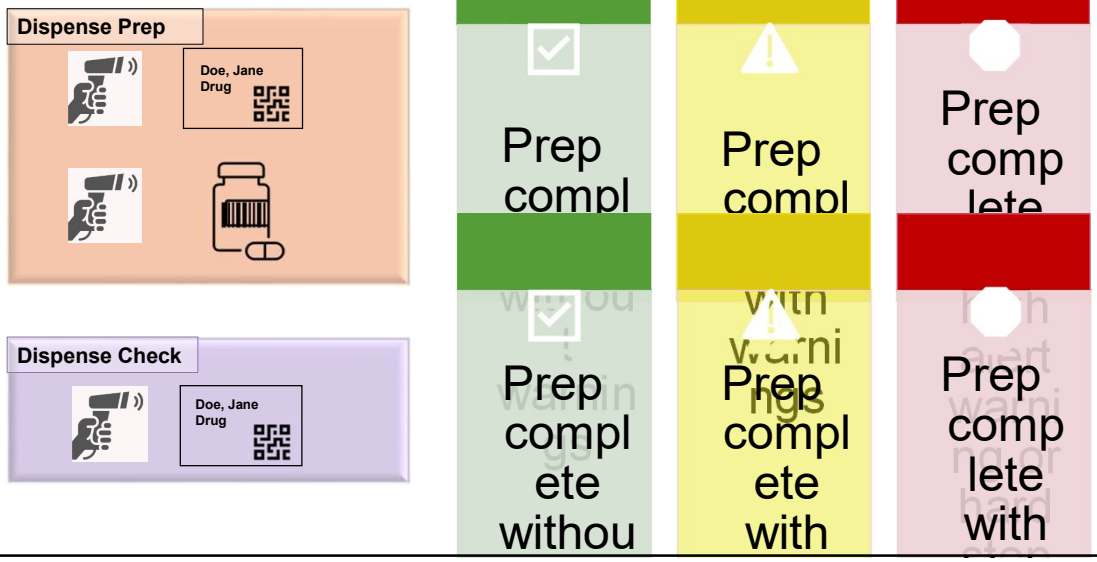
BACKGROUND: Dispense



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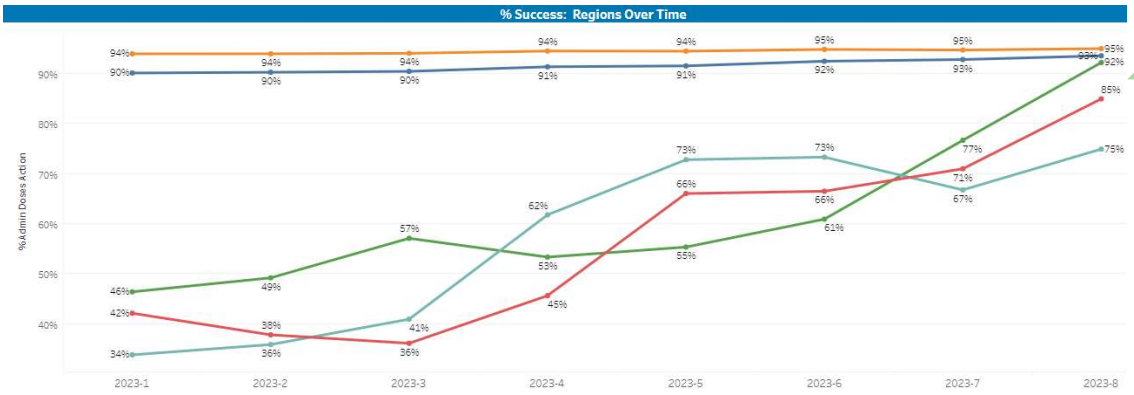
BACKGROUND: Dispense Prep and Check (DPC)



Increase use of DPC for ALL pharmacy dispenses = Increase DPC data

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Background

Sodium Chloride Oral Solution

- Population: NICU and Peds
- Product: Sodium Chloride 23.4% (4 mEq/mL) IV solution
- Routes:
  - Intravenous (IV)
    - Must be diluted
  - Oral
    - Non-diluted

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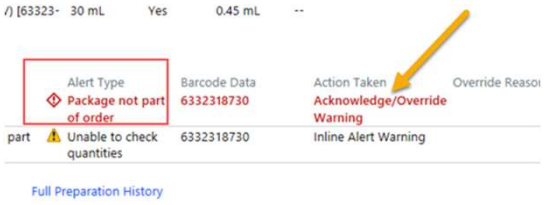
SAFETY STORY – Close Call Event

- **Dispense Prep**
  - Order for Sodium Chloride **2.5 mEq/mL** oral solution
  - Pharmacist verified order, but pharmacy does not carry 2.5 mEq/mL, only 4 mEq/mL
  - Technician compounded the Sodium Chloride 2.5 mEq/mL label with 4 mEq/mL product
  - Order was dispensed with dispense prep and warnings were overridden



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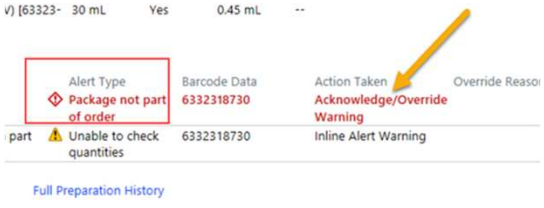
SAFETY STORY – Close Call Event

- **Dispense Check**
  - Volume on label, 7.1 mL was filled
  - Pharmacist checked the dispense and the dispense check warning was also over-ridden
  - Medication sent to floor but was caught by another pharmacist from warnings on order history and taken back to pharmacy before given to patient
  - Order was filled with appropriate volume but wrong concentration, which would lead to overdose of drug



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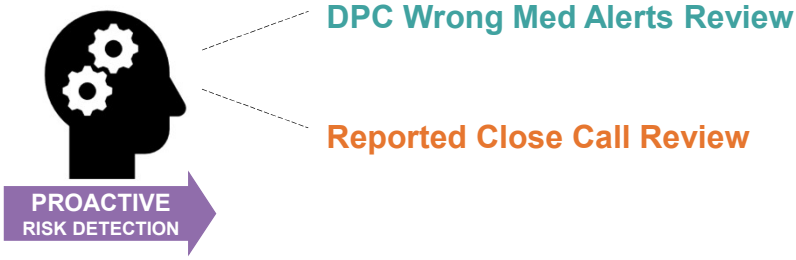
Proactive Risk Detection

In conjunction with reviewing close call medication events, the KP National Medication Safety team is proactively reviewing DPC wrong med alerts.



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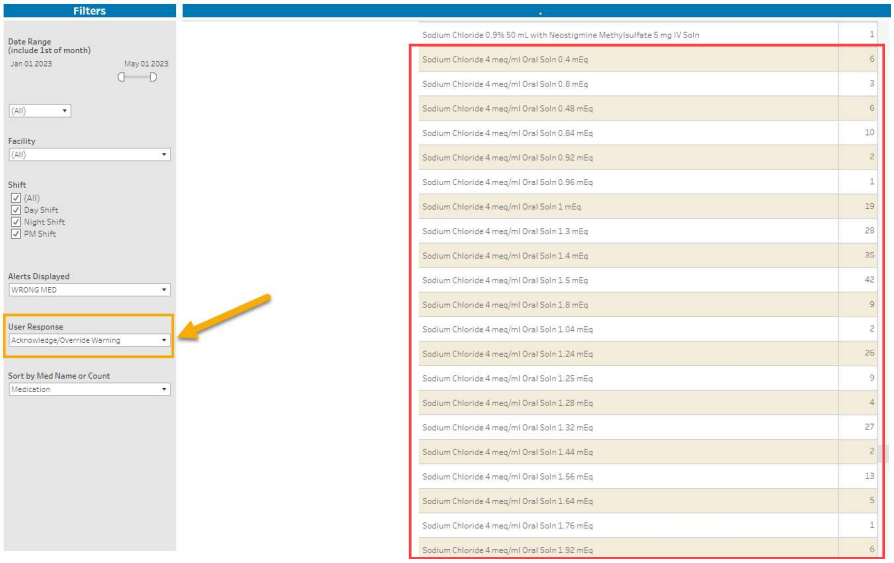
Proactive Risk Detection: DPC Wrong Med Alerts



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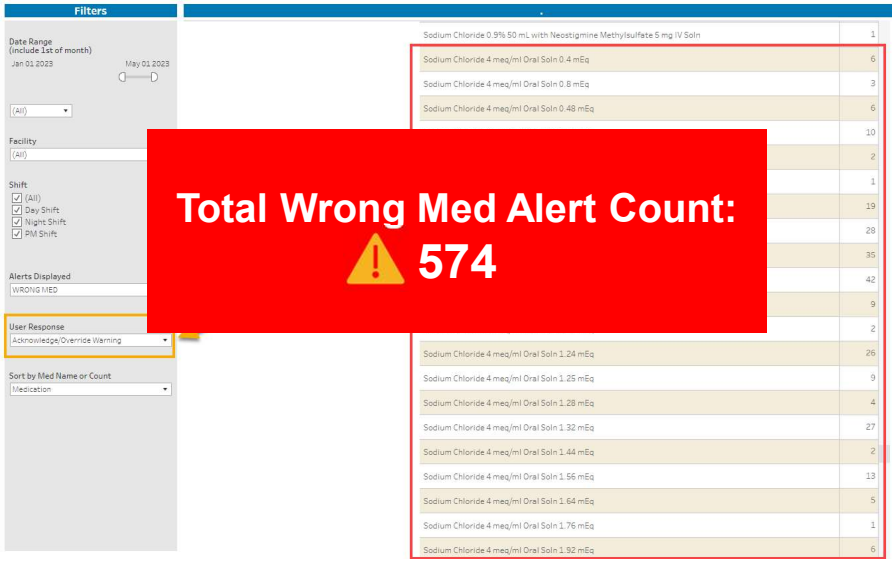
Proactive Risk Detection: DPC Wrong Med Alerts



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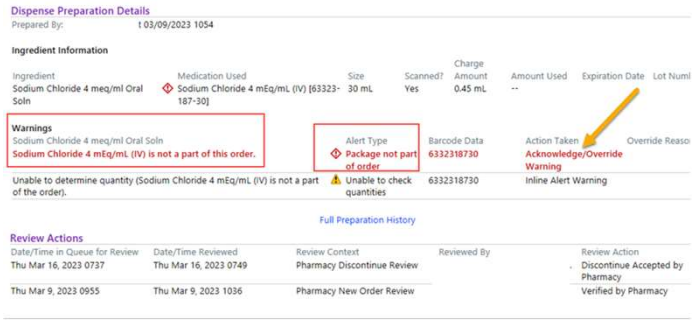
Assessment: System Gaps

- Why is Sodium Chloride 4 mEq/mL oral solution causing so many wrong med alerts?
  - Orders entered for:
    - ❖ SODIUM CHLORIDE 4 MEQ/ML **ORAL** SOLN PED (UW)
  - But dispense prepped with:
    - ❖ SODIUM CHLORIDE 4 MEQ/ML **(IV)**



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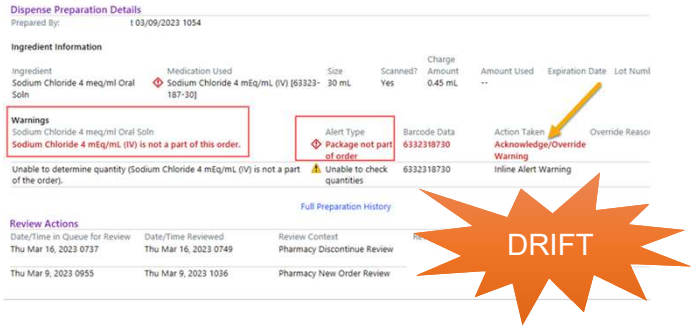

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Assessment: System Gaps

- Commercial product for Sodium Chloride 4 mEq/mL oral solution is **available**

Description	Form	Unit Size
SOD CHL CCNTRD ORAL SOL 473 ML SAFECOR WHL 10259941 | 48433-0215-01 | 732894 SAFECOR HEALTH LLC ZB	SOLUTION 23	473

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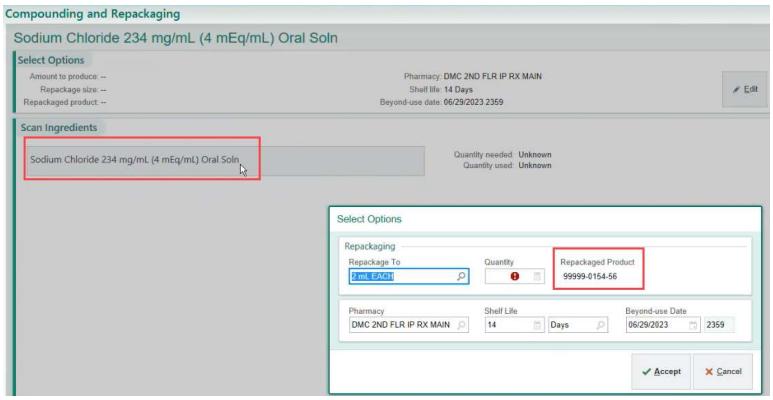
Assessment: System Gaps

- Compounding and repackaging (CNR) record was for repackaging the commercial Sodium Chloride oral solution product



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Actions and Recommendations

❑ **KP National Pharmacy Informatics**

- Reviewed Sodium Chloride oral solution ERX records
  - ✓ **Retired 3 ERX records to eliminate risk for wrong orders**
- Created a new CNR record that will allow users to **repackage** Sodium Chloride 4 mEq/mL IV solution into a 120 ml bottle for ORAL use

❑ **Inpatient Pharmacy**

- Order the Sodium Chloride 4 mEq/mL oral solution commercial product

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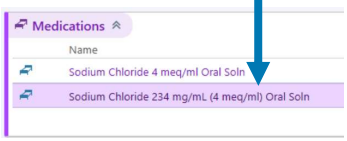
Best Practice

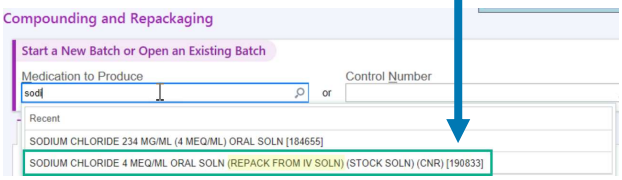
Dispensing Sodium Chloride 4 mEq/mL Oral Solution

Use preferred order entry:
SODIUM CHLORIDE 234 MG/ML (4 MEQ/ML) ORAL SOLN

Fill using the **commercial prod**

If commercial product is not available, utilize new **CNR** record to repackage Sodium Chloride 4 mEq/mL IV solution into a 120 ml bottle for ORAL use





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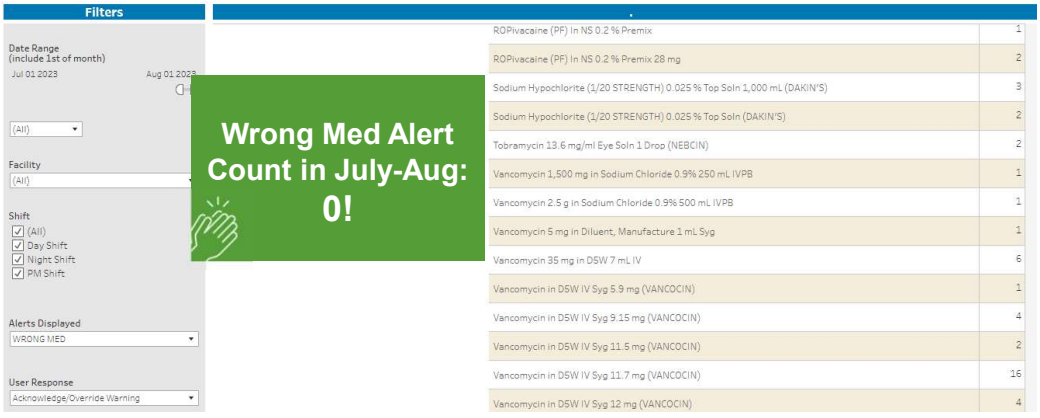
Proactive Risk Detection: Results



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Questions?

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Everyone Loves a Competition!

Stacy L. Carson, PharmD, BCPS, FISMP
Medication Safety Officer
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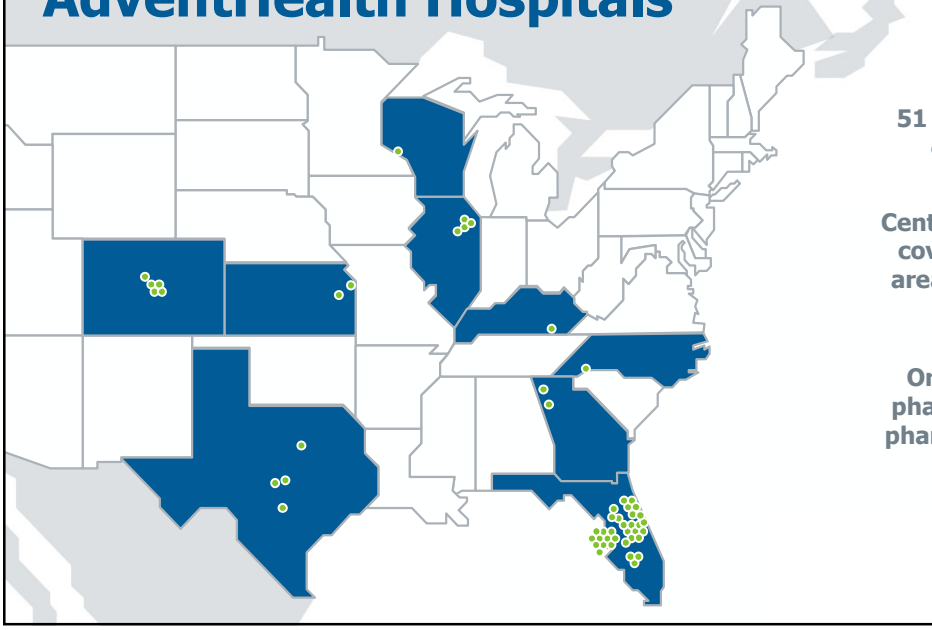

51 campuses in nine states
9,000+ licensed beds

Central Florida Division South covers the greater Orlando area & contains the flagship Orlando campus

Orlando campus precepts pharmacy students from 5+ pharmacy schools within and outside of FL

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What and Why

- Describe a collaboration with local medication safety leaders and a local pharmacy school student organization to put together a Medication Safety Competition
- Help students understand medication errors and systems thinking
- Promote medication safety careers with the next generation of pharmacists

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UF College of Pharmacy – Orlando Campus Medication Safety Competition

- Sponsored by the local SSHP Student Chapter
- Held in Spring of each year
- Teams of 2 students (from any year)
- Have 1 hour to review case(s), identify medication errors, causes of errors, and prevention strategies
- Teams present their analysis of the cases to judges
- Judges use grading rubric & determine the winners

SSHP = Student Society of Health System Pharmacy

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Goals and Benefits of the Competition

1. Raise awareness of how culture, processes, and systems can lead to medication errors
2. Utilize critical thinking skills and root cause analysis techniques to identify cause of medication errors
3. Create and effectively communicate strategies to prevent future medication errors

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Logistics of Case Presentation

- Teams given 10 mins to present and walk through cases
- Then 10 minutes for Judges to ask questions and review cases with Team
- Judges' scores are tallied, and the top 3 teams chosen

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Grading Rubric

Category	Scoring Criteria	Total Points	Score
Medication Error (25 points)	Identification of errors.	25	
Underlying Causes (15 points)	Identification of causal factors.	5	
	Identification of root causes.	5	
	Appropriate use of root cause and other techniques.	5	
Prevention Strategies & Potential Barriers (20 points)	Strategy is realistic and attainable.	5	
	Strategy contains a follow up plan.	5	
	Anticipation of short-term barriers.	5	
	Anticipation of long-term barriers.	5	
Presentation Skills (20 points)	Information is presented in a logical order.	5	
	Speaker uses a clear, audible voice.	5	
	Non-verbal behaviors – Free of distraction	5	
	Length of presentation is within the assigned time limits.	5	
	Information was well communicated.	5	
Overall Evaluation of Participants		15	
Score	Total Points	100	

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AdventHealth's Participation in the Competition

- Approached by UF students to participate in the competition
- Agreed to be a judge and to create the case in 2021 & 2023
  - Included our MUSP* resident
- Pulled a small team of AdventHealth MUSP preceptors together to create the case + answer key

*MUSP = Medication Use Safety & Policy PGY2 Pharmacy Resident

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The Cases

- Instead of one monster case, broke up into 3 smaller cases:
  - Community/Retail pharmacy focused
  - Hospital pharmacy focused
  - Ambulatory care pharmacy focused
- Goal to have one main error for each case and then other smaller errors
- By having cases from different areas of pharmacy, younger students likely to be familiar with at least one of the pharmacy settings

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2021 Cases:

- Hospital = compounding error of norepinephrine bags (no drug in bag)
- Retail = intern misheard 50 vs. 15 pounds and therefore recommended wrong dose of children's ibuprofen liquid verbally to mom over phone
- Ambulatory = patient recently discharged from hospital; discrepancies of discharge med list versus bag of pill bottles

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2023 Cases:

Same patient progressed through all 3 settings

- Ambulatory = Vaccine errors (Covid & Flu); drug interactions
- Hospital = levothyroxine error (mcg vs mg); wrong medication pulled out from ADC Override (typed in "FLU"; flumazenil vs fluphenazine)
- Retail = oral methotrexate daily vs. weekly; duplicate warfarin; polypharmacy

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2023 Example Case – Retail Case

- MM recently diagnosed with Rheumatoid Arthritis and started on methotrexate oral.
- A few weeks after being discharged from the hospital, MM walks to her neighborhood pharmacy with a bag of medication bottles, some empty and others near empty asking for refills. The pharmacy intern recognizes MM as a regular patient and asks her if she has been to the beach as she has a golden hue. MM tells her about her recent RA diagnosis and now she is contending with frequent nose bleeds. MM asks to fill the following medications:
  - Amiodarone 200 mg tabs = Take 1 tablet by mouth daily
  - Lisinopril 10 mg tabs = Take 1 tablet by mouth daily
  - Methotrexate 2.5 mg tabs = Take 5 tablets by mouth weekly
  - Metoprolol tartrate 25 mg tabs = Take 1 tablet by mouth twice daily
  - Warfarin 3 mg tabs = Take 1 tablet by mouth daily
- The intern starts processing her refills and realizes there are new medications filled by a mail-order pharmacy and will need to have the prescriptions transferred.
- While the pharmacy intern contacts the mail order pharmacy, the pharmacist takes MM to the consultation window to discuss nose bleeds. The intern interrupts the consultation to notify the pharmacist that the methotrexate prescription is being flagged as "refill too soon". The pharmacist returns to MM and asks how she is taking her medications. MM states she diligently takes warfarin from each bottle daily and complains about the handful of methotrexate tablets daily along with the medications she has been taking for years.

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2023 Example Case – Retail Case Answers

1. Patient taking methotrexate incorrectly: daily versus weekly
   a) No patient counseling because mail order?
   b) Golden hue could be indicator of hepatotoxicity
2. Duplicate warfarin
   a) Nose bleeds
   b) Lack of monitoring for warfarin
   c) Drug interaction with methotrexate
3. Multiple pharmacies filling prescriptions unable to see whole clinical picture

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2023 Competition Highlights

June 2023, Issue 10 | FLORxIDA Times

FSHP STUDENT CHAPTER HIGHLIGHT

University of Florida College of Pharmacy - Orlando

Diligent leaders committed to bringing back in-person student engagement with a variety of fun-filled experiences that enriches their knowledge.

The SSHP student chapter at the University of Florida (Orlando campus) was committed to bring back live student engagement as restrictions for COVID-19 gradually became lifted.

In addition, they also held a Medication Safety Competition in the month of March. During this competition, students worked in pairs reviewing and working up cases to identify medication errors. They also found potential ways to mitigate these errors from reoccurring in the future. The student pairs then presented their findings to a panelist of Medication Safety pharmacists.

(left) Sierra Parsons and Danielle Wilson presenting their cases during the Medication Safety Competition to judges: Dr. Haley Evans, Dr. Emily Repella, and Dr. Stacy Carson.

FSHP. FLORxIDA Times Newsletter. June 2023. https://cdn.ymaws.com/www.fshp.org/resource/resmgr/newsletter/FSHP_Newsletter-10-Jun2023.pdf

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Thank you!
Questions?

Stacy L. Carson, PharmD, BCPS, FISMP
Medication Safety Officer
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Corewell Health™

Eliminating Inadvertent Exposure with Patient Specific Scanning of Multi-Use Medications

Steve Mogridge, PA-C- Director of Safety
Megan Fletcher, PharmD- Vice President of Pharmacy Services
Shane Wehler- Epic Application Analyst

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Corewell Health™

Corewell Health System

- **60,000+** Team Members
- **11,500+** Affiliated, Independent and Employed Physicians and Advanced Practice Providers
- **15,000+** Nurses
- **$100 Million** Health Equity Funding
- **300+** Ambulatory/ Outpatient Locations
- **22** Hospital Facilities
- **5,000+** Licensed Beds
- **$100 Million** Venture Capital Fund
- **1.3 Million** Health Plan Members
- **7,000+** Employers Contracted by Priority Health
- **$14.7 Billion** Enterprise

Epic Electronic Health Record

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Learning Objectives

- Identify gaps that can lead to inadvertent patient to patient exposure.
- Discuss risk mitigation strategies to reduce and eliminate patient harm from wrong patient exposures.

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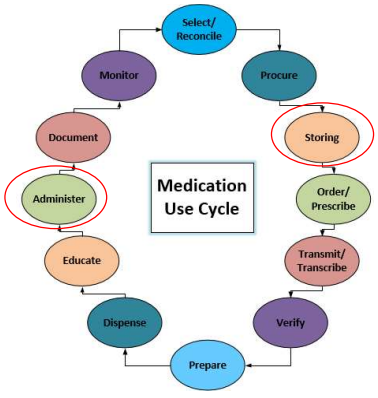
Situation

Problem: 36 known patient-to-patient exposures over a 24-month period from insulin pens
- Self-reported through event reporting system

Situational Awareness didn't make an impact

Gap Analysis revealed multifactorial Issue
- Storage
  - Technological Complacency
    - BCMA dependence
- Culture



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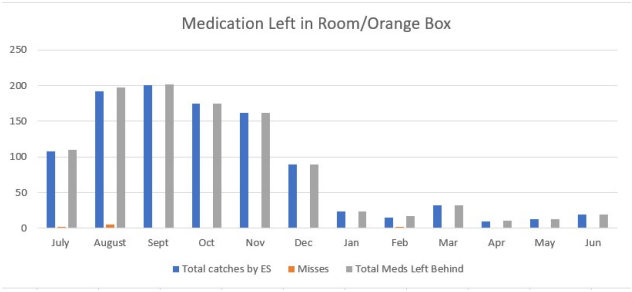
Risk Mitigation Gap/Solution

Problem:

- Medications kept in wooden locked drawer inconsistently removed at patient discharge
- Multiple Pens with different patients in one drawer

Solution:

- Transparent locking orange box mounted on wall
- Standard work changed for Nursing and Environmental Services to stop the line and suspend the room for cleaning affecting throughput.



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Risk Mitigation Gap/Solution

Problem: Five Rights of Medication Administration

- 53% able to recall all 5 rights (right patient, right drug, right dose, right route and right time)
- When asked, many stated they relied on barcode scanning to alert them if something wasn't correct.

Solution:

- Reinforcement of the 5 Rights
- Visual management

Outcomes:

- Knowledge of 5 Rights of Medication Administration increased to 78%.
- Behavior did not change with utilization and reliance on BCMA being strong

Medication administration needs to be a BCMA and the 5 rights, not BCMA or the 5 rights

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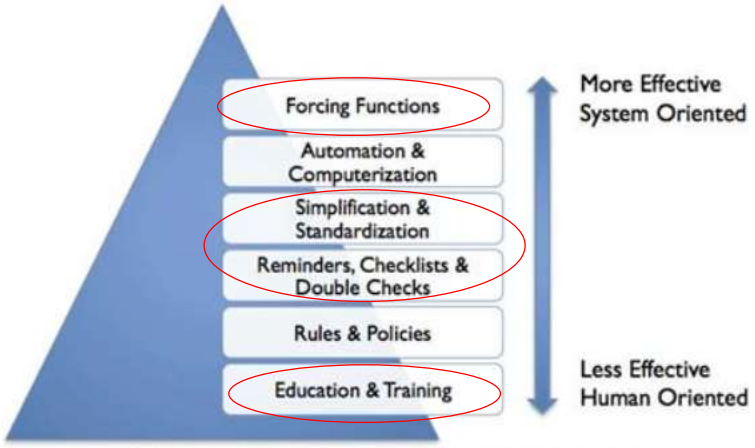
Hierarchy of Effectiveness



Ref: www.cassiemcdaniel.com/blog/hierarchy-of-effectiveness-process

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Risk Mitigation Gap/Solution

1. Installed patient specific label printers in each medication room
2. Formulary short action and long action insulin pens moved to the ADC with appropriate BUD
3. New Epic worksheet that prints a patient specific barcode to the new printer in the medication room
4. Insulin pens removed from the ADC are labeled with patient specific barcode label before exiting the medication room

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Multi-Use Labeling for Insulin

EPICPOC, SHANE
MRN: 30007833
DOB: 9/24/1992 (27 yrs)

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Administration Process

- Unique forcing function build within Epic
- Scan Patient wrist band, scan new bar code on product, scan manufacturer bar code (triple scan)
- Ensures correct patient, correct patient's device and correct product

forcing function

mechanisms built into the workflow to prevent specific errors or reduce their impact

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Patient Specific Scanning Best Practice Alerts (BPA's)

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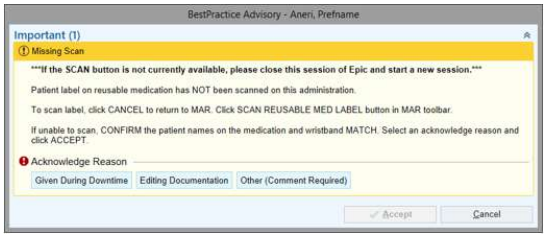
- Correct: Green Banner
- Incorrect: Red Banner
  - Additional comment required to proceed and additional stop alert
- Wrong Order: Orange Banner
  - Additional comment required to proceed
- Missing Scan BPA

Correct patient scanned. Close this form by clicking 'Accept' and scan product barcode

Incorrect Patient. Do not use this device for this patient. Obtain a new device and apply the patient label.

The barcode scanned was not the expected patient label. Please clear the field above and scan the patient barcode.



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Outcome

- Over 1.3 Million administrations, recorded 87 near misses
- Tableau Report
  - Ability to drill down to unit, patient and nurse level
- ZERO known recorded exposures since go-live (November 2019)
- Trifecta win for pharmacy, nursing, and patients

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September 2023

Near Misses Per 1000 Medication Administrations Rate

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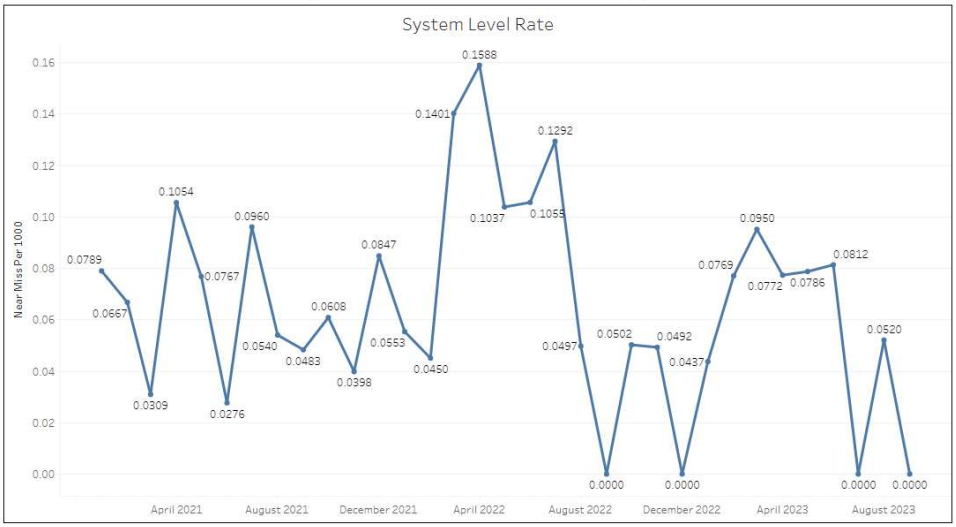
Average Rate per Day	Total Near Misses	Total Med Admins
0.06645	87	1,310,490



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Near Miss Detail

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Near Miss Time	Location	Unit	User	Alert_Reason	MedicationAlertType	MarResponse
6/19/2023 4:07:00 PM				BestPractice Advisory	Null	Null
6/15/2023 8:21:00 PM				BestPractice Advisory	Null	Null
6/3/2023 9:29:00 PM				MAR Off Schedule Warning - No Due Cons..	Null	Null
5/18/2023 5:25:00 PM				MAR Admin Partial Package Warning	Null	Null
5/13/2023 5:38:00 PM				Med Interaction Checking	Pregnancy	Null
5/9/2023 8:47:00 PM				Med Interaction Checking	Dose	Null
4/25/2023 2:05:00 AM				Med Interaction Checking	Drug-Drug	Null
4/23/2023 8:59:00 AM				Med Interaction Checking	Dose	Null
4/11/2023 5:53:00 PM				MAR Admin Partial Package Warning	Null	Null
3/26/2023 6:10:00 PM				Med Interaction Checking	Drug-Drug	Null
3/22/2023 9:16:00 AM				BestPractice Advisory	Null	Null
3/18/2023 9:47:00 PM				MAR Patient Not Scanned Warning	Null	Given
3/15/2023 11:30:00 AM				MAR Patient Not Scanned Warning	Null	Given
2/22/2023 1:57:00 PM				BestPractice Advisory	Null	Null
2/19/2023 6:34:00 PM				BestPractice Advisory	Null	Null
2/4/2023 12:03:00 AM				BestPractice Advisory	Null	Null
1/27/2023 9:50:00 PM				BestPractice Advisory	Null	Null
1/8/2023 9:59:00 AM				MAR Off Schedule Warning - No Due Cons..	Null	Null
11/19/2022 3:00:00 PM				MAR ORD ID Order Is Not Active Warning	Null	Null
11/18/2022 9:06:00 AM				MAR Medication Not Scanned Warning	Null	Given
10/28/2022 8:44:00 AM				Med Interaction Checking	Duplicate Medicatio..	Null
10/22/2022 1:56:00 PM				BestPractice Advisory	Null	Null
8/25/2022 8:21:00 PM				MAR Off Schedule Warning - No Due Cons..	Null	Null
8/24/2022 10:54:00 AM				Med Interaction Checking	Pregnancy	Null
7/23/2022 4:52:00 PM				Med Interaction Checking	Dose	Null
7/23/2022 4:51:00 PM				Med Interaction Checking	Drug-Drug	Null
7/12/2022 12:55:00 PM				BestPractice Advisory	Null	Null
7/3/2022 8:56:00 AM				BestPractice Advisory	Null	Null
7/2/2022 2:09:00 PM				Med Interaction Checking	Dose	Null
6/28/2022 3:00:00 AM				MAR Off Schedule Warning - No Due Cons..	Null	Null
6/13/2022 3:23:00 PM				Med Interaction Checking	Drug-Drug	Null
6/13/2022 2:45:00 PM				MAR Dose Warning	Null	Null

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BPA Overridden by RN

Potential Exposure

ALERT_ACTION_DATE	PAT_ENC_CSN_ID	ALERT_CSN_ID	LOC_NAME	DEPARTMENT_NAME	PROV_NAME	BPA_DISPLAY_NAME
3/22/2023						SH IP B REUSABLE MED SCAN IS WRONG MRN [114
2/19/2023						SH IP B REUSABLE MED SCAN IS WRONG MRN [114
2/4/2023						SH IP B REUSABLE MED SCAN IS WRONG MRN [114
						SH IP B REUSABLE MED SCAN IS WRONG MRN [114
1/27/2023						SH IP B REUSABLE MED SCAN IS WRONG MRN [114
						SH IP B REUSABLE MED SCAN IS WRONG MRN [114
11/18/2022						SH IP B REUSABLE MED SCAN IS WRONG MRN [114
10/22/2022						SH IP B REUSABLE MED SCAN IS WRONG MRN [114
8/24/2022						SH IP B REUSABLE MED SCAN IS WRONG MRN [114
						SH IP B REUSABLE MED SCAN IS WRONG MRN [114

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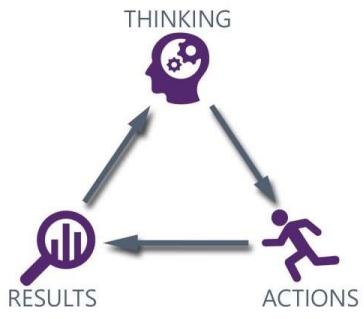
Lessons Learned

- Previous exposures were under reported.
- Fix the system, not the person.
- Expanded to inhalers and seeking additional functionality.
- Multidisciplinary collaboration was essential to success.
- Change is difficult and storytelling is key (ADKAR)
- System works when scanning is utilized



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Questions

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Institute for Safe Medication Practices
An ECRI Affiliate

ISMP Update
MSOS Briefing September 2023

Michael R. Cohen, MS, ScD (hon), DPS (hon), FASHP
President Emeritus
Institute for Safe Medication Practices

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MSOS Member Briefing
September 2023

ISMP Updates

- Methotrexate medication errors
- Dialysate case, last week's lead article in the ISMP newsletter.
- New legislation passed in California to address understaffing and medication errors in chain pharmacies
- ISMP Cheers Event on December 5th, 2023
- ASTM standard for class color coding of user-applied labels in anesthesia
- Medication Safety Intensive Workshops

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MSOS Member Briefing
September 2023

September 21, 2023 | Volume 28 • Issue 19

ISMP

Acute Care

ISMP Medication Safety Alert!®

Educating the Healthcare Community About Safe Medication Practices

Patient death tied to lack of proper escalation process for barcode scanning failures

Problem: A patient who was hospitalized in the intensive care unit (ICU) for rectal bleeding was scheduled to have a colonoscopy the following day. A prescriber ordered **SUPREP BOWEL PREP KIT** (sodium sulfate, potassium sulfate, and magnesium sulfate) (**Figure 1**) to be administered orally for cleansing of the colon as a preparation for the colonoscopy. Unfortunately, instead of Suprep, the patient was mistakenly given **NATURALYTE**, which is a liquid acid concentrate for bicarbonate hemodialysis, used as a dialysate with hemodialysis equipment after proper dilution. The patient later died and local media covered the incident. Via an open records request to the state board of nursing that investigated the situation given a nurse's involvement in the error, ISMP obtained a report that helped to detail system failures that contributed to this tragic medication error.

Figure 1. Suprep Bowel Prep Kit was ordered in preparation for a colonoscopy.

NaturaLyte, which is available in a large plastic container, had been left in the ICU by the dialysis team for a different patient who was undergoing hemodialysis about 3 days before this incident. The large container was placed in the same medication area as are other bulk items when delivered from pharmacy. When it was time to administer the bowel prep, the nurse went to the medication area and saw two large plastic containers labeled NaturaLyte, containing a clear liquid. The nurse assumed these were similar to **GOLYTELY** (polyethylene glycol 3350 and electrolytes for oral solution), which is widely used as a bowel prep and apparently more familiar than Suprep. The board report voiced a concern that the NaturaLyte label was not visually double-checked before giving it to the patient in error. However, this may not have raised a red flag if the nurse thought NaturaLyte was a generic replacement for GoLYTELY, given that many generic products have different brand names than the original product name. In addition, NaturaLyte and GoLYTELY show similarities, namely the NaturaLyte label lists ingredients including magnesium, potassium, and sodium, in the same manner as the container of GoLYTELY lists electrolytes. Also, both are in large plastic containers (**Figure 2**). The board report did not mention whether the actual Suprep product had been dispensed by the pharmacy and was present on the unit but not located by the nurse.

Figure 2. NaturaLyte, a liquid acid concentrate for bicarbonate hemodialysis (left), and GoLYTELY, used for bowel cleansing (right), are packaged in large plastic containers.

Although NaturaLyte has a barcode, the barcode may not be

continued on page 2 — Escalation process >

Worth repeating...

Fluzone packaging leads to a double dose

In our September 7, 2023 newsletter, we published a ***SAFETY* brief** about the potential for double dosing of **FLUZONE** (influenza) high-dose vaccine. Sanofi Pasteur sells Fluzone in cartons of 10 single-dose syringes. However, the packaging is confusing because each carton holds five sealed trays, containing two 0.7 mL single-dose syringes (**Figure 1**). Given that two syringes are packaged together, it is predictable that someone might think both are needed for a dose, especially since the vaccine is referred to as "high dose" influenza vaccine (intended for people 65 years and older). Since that ***SAFETY* brief** was published, we did receive a report in which a patient was given a double dose due to the confusing packaging. We have notified Sanofi Pasteur once again about this concern. If your organization purchases this vaccine, notify staff about the potential for errors. Ensure barcode scanning is used where available. Either dispense as a unit dose syringe or, if the entire carton must be dispensed, add auxiliary labels noting that each dose requires only one syringe.

Figure 1. Fluzone (high-dose) comes with two single-dose syringes sealed in each tray.

SAFETY briefs

Hazard Alert! Medisca 20 mL oral syringes could lead to dosing errors. Due to a supply shortage involving the usual oral syringe supplier, a pharmacy purchased 20 mL oral syringes from an alternative manufacturer, Medisca.

continued on page 2 — *SAFETY* briefs >

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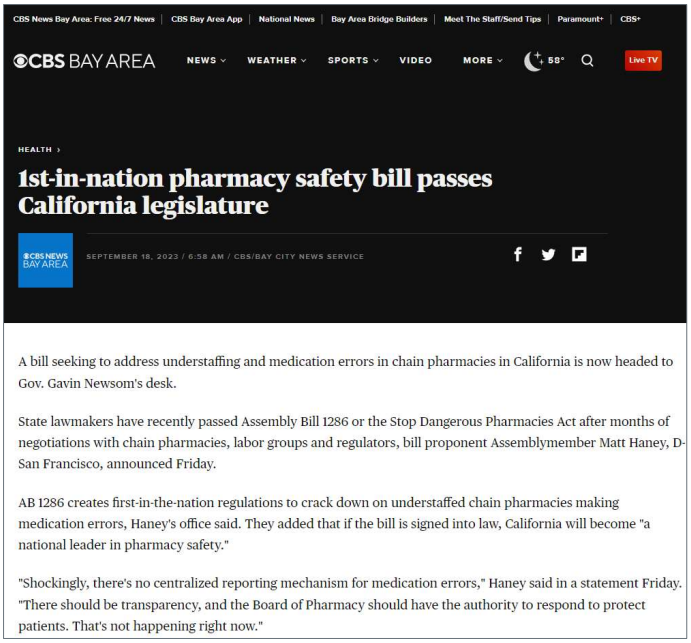

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HEALTH ›

1st-in-nation pharmacy safety bill passes California legislature

CBS NEWS BAY AREA SEPTEMBER 18, 2023 / 6:58 AM / CBS/BAY CITY NEWS SERVICE

A bill seeking to address understaffing and medication errors in chain pharmacies in California is now headed to Gov. Gavin Newsom's desk.

State lawmakers have recently passed Assembly Bill 1286 or the Stop Dangerous Pharmacies Act after months of negotiations with chain pharmacies, labor groups and regulators, bill proponent Assemblymember Matt Haney, D-San Francisco, announced Friday.

AB 1286 creates first-in-the-nation regulations to crack down on understaffed chain pharmacies making medication errors, Haney's office said. They added that if the bill is signed into law, California will become "a national leader in pharmacy safety."

"Shockingly, there's no centralized reporting mechanism for medication errors," Haney said in a statement Friday. "There should be transparency, and the Board of Pharmacy should have the authority to respond to protect patients. That's not happening right now."

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MSOS Member Briefing
September 2023

Tuesday evening, December 5, 2023

House of Blues - Anaheim
400 Disney Way, #337
Anaheim, CA 92802

Keynote speaker, RaDonda Vought

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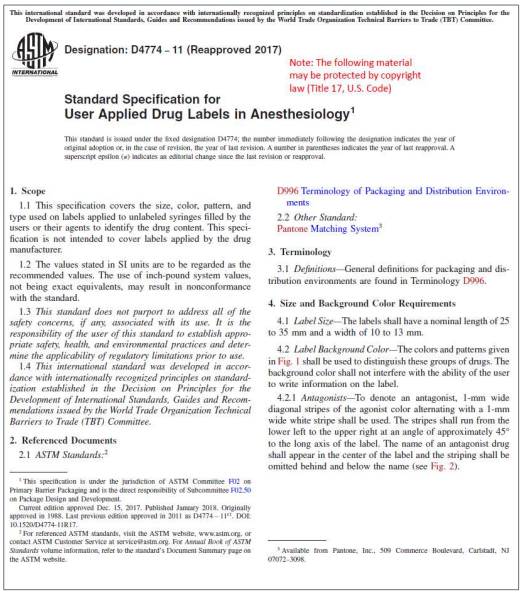


This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

Designation: D4774 – 11 (Reapproved 2017)

Note: The following material may be protected by copyright law (Title 17, U.S. Code)

Standard Specification for User Applied Drug Labels in Anesthesiology[1]

This standard is issued under the fixed designation D4774; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers the size, color, pattern, and type used on labels applied to unlabeled syringes filled by the users or their agents to identify the drug content. This specification is not intended to cover labels applied by the drug manufacturer.

1.2 The values stated in SI units are to be regarded as the recommended values. The use of inch-pound system values, not being exact equivalents, may result in nonconformance with the standard.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D996 Terminology of Packaging and Distribution Environments

2.2 *Other Standard:*

Pantone Matching System[3]

3. Terminology

3.1 *Definitions*—General definitions for packaging and distribution environments are found in Terminology D996.

4. Size and Background Color Requirements

4.1 *Label Size*—The labels shall have a nominal length of 25 to 35 mm and a width of 10 to 13 mm.

4.2 *Label Background Color*—The colors and patterns given in Fig. 1 shall be used to distinguish these groups of drugs. The background color shall not interfere with the ability of the user to write information on the label.

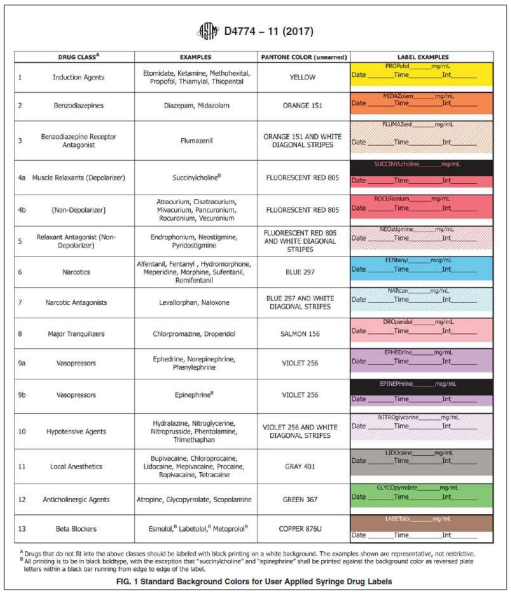
4.2.1 *Antagonists*—To denote an antagonist, 1-mm wide diagonal stripes of the agonist color alternating with a 1-mm wide white stripe shall be used. The stripes shall run from the lower left to the upper right at an angle of approximately 45° to the long axis of the label. The name of an antagonist drug shall appear in the center of the label and the striping shall be omitted behind and below the name (see Fig. 2).

[1] This specification is under the jurisdiction of ASTM Committee F02 on Primary Barrier Packaging and is the direct responsibility of Subcommittee F02.50 on Package Design and Development.

Current edition approved Dec. 15, 2017. Published January 2018. Originally approved in 1988. Last previous edition approved in 2011 as D4774 – 11[ε1]. DOI: 10.1520/D4774-11R17.

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] Available from Pantone, Inc., 590 Commerce Boulevard, Carlstadt, NJ 07072–3098.



D4774 – 11 (2017)

	DRUG CLASS[A]	EXAMPLES	PANTONE COLOR (unnamed)	LABEL EXAMPLES
1	Induction Agents	Etomidate, Ketamine, Methohexital, Propofol, Thiamylal, Thiopental	YELLOW	PROMidal_____mg/mL Date_____Time_____Int_____
2	Benzodiazepines	Diazepam, Midazolam	ORANGE 151	MIDAZolam_____mg/mL Date_____Time_____Int_____
3	Benzodiazepine Receptor Antagonist	Flumazenil	ORANGE 151 AND WHITE DIAGONAL STRIPES	FLUMAZenil_____mg/mL Date_____Time_____Int_____
4a	Muscle Relaxants (Depolarizer)	Succinylcholine[B]	FLUORESCENT RED 805	SUCCINYLcholine_____mg/mL Date_____Time_____Int_____
4b	(Non-Depolarizer)	Atracurium, Cisatracurium, Mivacurium, Pancuronium, Rocuronium, Vecuronium	FLUORESCENT RED 805	ROCURonium_____mg/mL Date_____Time_____Int_____
5	Relaxant Antagonist (Non-Depolarizer)	Endrophonium, Neostigmine, Pyridostigmine	FLUORESCENT RED 805 AND WHITE DIAGONAL STRIPES	NEOStigmine_____mg/mL Date_____Time_____Int_____
6	Narcotics	Alfentanil, Fentanyl, Hydromorphone, Meperidine, Morphine, Sufentanil, Remifentanil	BLUE 297	FENTanyl_____mcg/mL Date_____Time_____Int_____
7	Narcotic Antagonists	Levallorphan, Naloxone	BLUE 297 AND WHITE DIAGONAL STRIPES	NARcan_____mg/mL Date_____Time_____Int_____
8	Major Tranquilizers	Chlorpromazine, Droperidol	SALMON 156	DROPeridol_____mg/mL Date_____Time_____Int_____
9a	Vasopressors	Ephedrine, Norepinephrine, Phenylephrine	VIOLET 256	EPHEDrine_____mg/mL Date_____Time_____Int_____
9b	Vasopressors	Epinephrine[B]	VIOLET 256	EPINEPHrine_____mcg/mL Date_____Time_____Int_____
10	Hypotensive Agents	Hydralazine, Nitroglycerine, Nitroprusside, Phentolamine, Trimethaphan	VIOLET 256 AND WHITE DIAGONAL STRIPES	NITROglycerine_____mg/mL Date_____Time_____Int_____
11	Local Anesthetics	Bupivacaine, Chloroprocaine, Lidocaine, Mepivacaine, Procaine, Ropivacaine, Tetracaine	GRAY 401	LIDOcaine_____mg/mL Date_____Time_____Int_____
12	Anticholinergic Agents	Atropine, Glycopyrrolate, Scopolamine	GREEN 367	GLYCOpyrrolate_____mg/mL Date_____Time_____Int_____
13	Beta Blockers	Esmolol,[B] Labetolol,[B] Metoprolol[B]	COPPER 872U	LABETalol_____mg/mL Date_____Time_____Int_____

[A] Drugs that do not fit into the above classes should be labeled with black printing on a white background. The examples shown are representative, not restrictive.
[B] All printing is to be in black boldtype, with the exception that "succinylcholine" and "epinephrine" shall be printed against the background color as reversed plate letters within a black bar running from edge to edge of the label.

FIG. 1 Standard Background Colors for User Applied Syringe Drug Labels

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Medication Safety Intensive Workshops

Maximize your error prevention efforts with a two-day virtual workshop!

ACUTE CARE

- **October 4 & 5, 2023**: www.ismp.org/node/52891
- **November 30 & December 1, 2023**: www.ismp.org/node/76170

COMMUNITY & SPECIALTY PHARMACY

- **October 20 & 27, 2023**: www.ismp.org/node/75243

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Questions?

- A copy of today's slides will be posted on our website
- Next MSOS Briefing date – November 16, 2023.

MSOS MEDICATION SAFETY OFFICERS SOCIETY

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