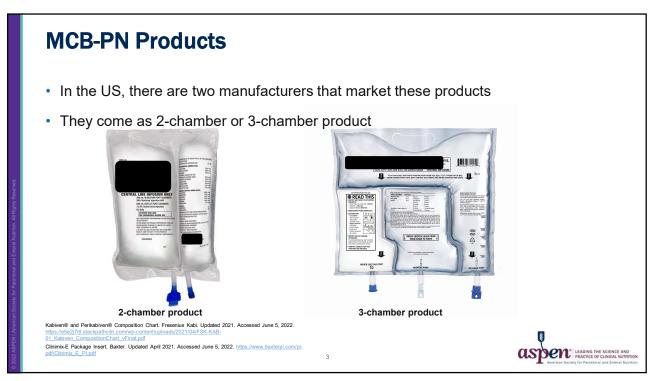


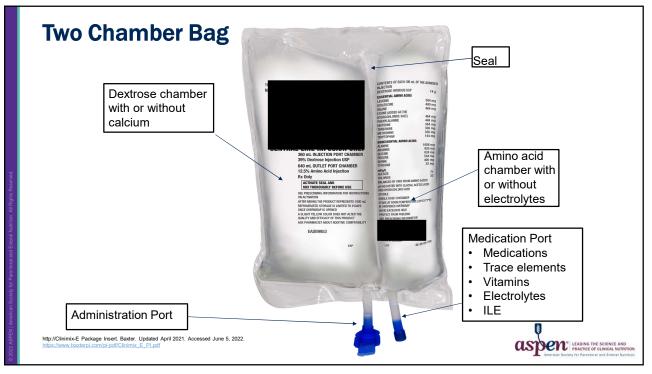
Multi-Chamber Bag Parenteral Nutrition (MCB-PN) Review

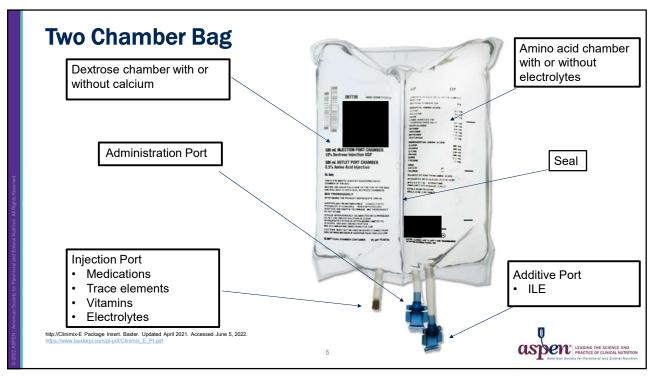


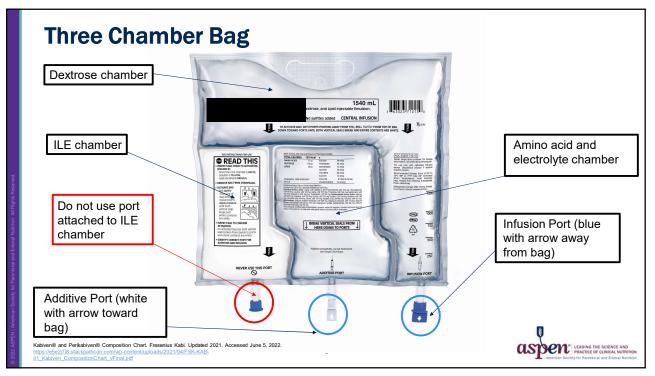
Andrew Mays, PharmD, MBA, BCNSP, CNSC, FASPEN Clinical Pharmacy Specialist – Nutrition Support University of Mississippi Medical Center Clinical Assistant Professor University of Mississippi School of Pharmacy Jackson, Mississippi



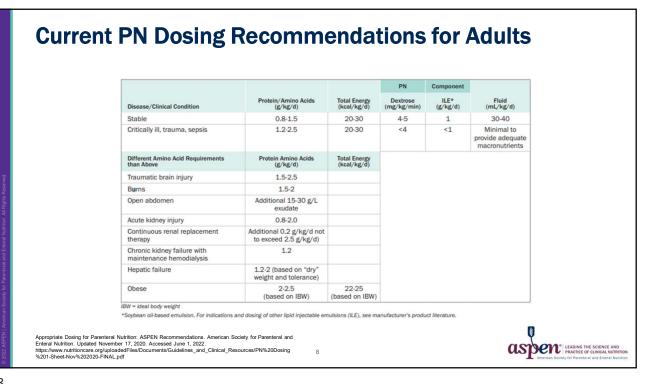


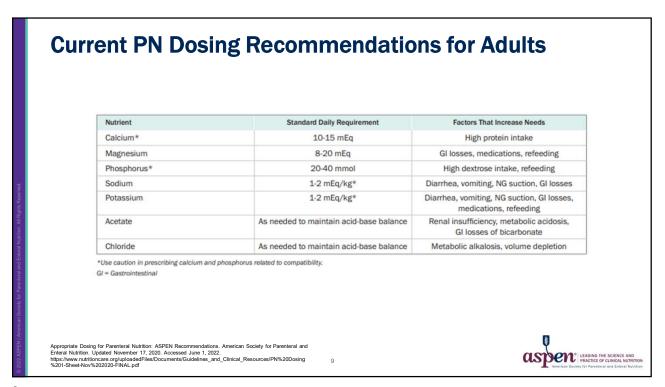






Characteristics	2 Chamber	3 Chamber
Venous Access Route	Peripheral or Central*	Peripheral or Central*
Chambers	Amino Acid + Dextrose	Amino Acid + Dextrose + ILE
Volume	1000 mL and 2000 mL	Varies
Electrolytes	With or Without	With
Amino Acid Concentration	2.75% to 8%**	34 g to 85 g per bag
Dextrose Concentration	5% to 25%**	100 g to 250 g per bag
Depends on osmolarity	ns varies based upon formula	ation





MCB-PN and Meeting Patient Requireme	nts
--------------------------------------	-----

	Two Chamber MCB-PN with Electr	olytes	Electrolyte Content (per 1	L)
	Sodium		35 mEq	
	Potassium		30 mEq	
	Magnesium		5 mEq	
	Calcium		4.5 mEq	
	Phosphate		15 mmol	
	Three Chamber MCB-PN	Electr	olyte Content (per 1 L)	
	Sodium	31 mE	q	
	Potassium	23 mE	q	
	Magnesium	3.9 mE	Eq	
	Calcium	1.9 mE	q	
	Phosphate	9.7 mr	nol	
https://e5e2j7i8.stackpathcdn.cor 01_Kabiven_CompositionChart_v	poeltion Chart, Freenius Kabi, Updated 2021, Accessed June 5, 2022. wp-content/uploads/2021/04/FSK-KAB- Final.pdf . Updated April 2021. Accessed June 5, 2022. <u>https://www.baxterpl.com/pi-</u>	10	as	sp

# Multi-Chamber Parenteral Nutrition Limitations and Safety Concerns



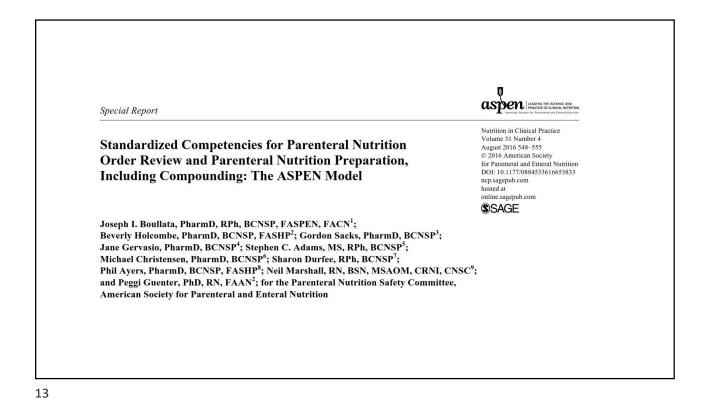
Phil Ayers, BS, PharmD, BCNSP, FMSHP, FASHP Chief, Clinical Pharmacy Services Mississippi Baptist Medical Center Clinical Associate Professor University of Mississippi School of Pharmacy Jackson, MS



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#### Disclosure

- Baxter-Speaker
- Fresenius Kabi-Consultant, Speaker



# Standardized Competencies for Parenteral Nutrition

#### Multi-chamber PN Product Checklist:

Identifies the correct product and volume to meet the PN order

Inspects the product for any damage or deterioration prior to removing the overwrap

Completely activates and agitates the product to mix all components together

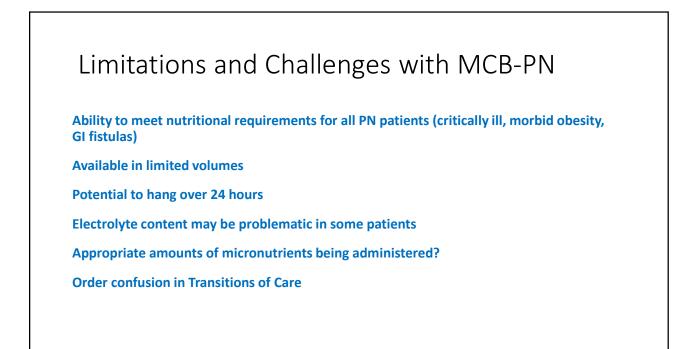
□Identifies inappropriate additives

Dakes manual additives as ordered

Completely affixes patient-specific and auxiliary labels

□Places completed PN in refrigeration prior to delivery

Nutr Clin Pract. 2016;31:548-555



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### Safety Concerns associated with MCB-PN

Not seen as parenteral nutrition

MCB not activated properly and under aseptic conditions USP <797>

MCB continues to be administered past 24 hours after activation

Addition of additives that may alter the stability of the MCB

Addition of important components (MVI, Trace Elements) omitted

ILE not administered with 2 chamber MCB

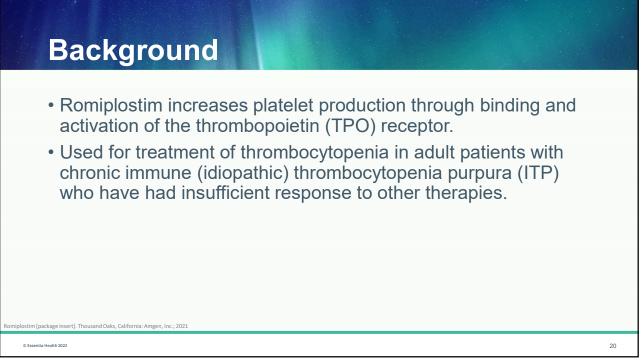
**Transitions of Care** 

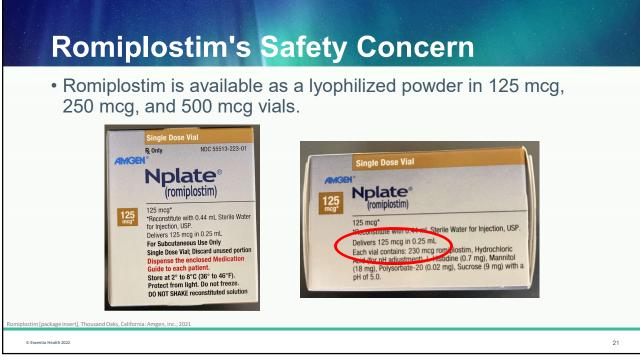
Use in the home environment

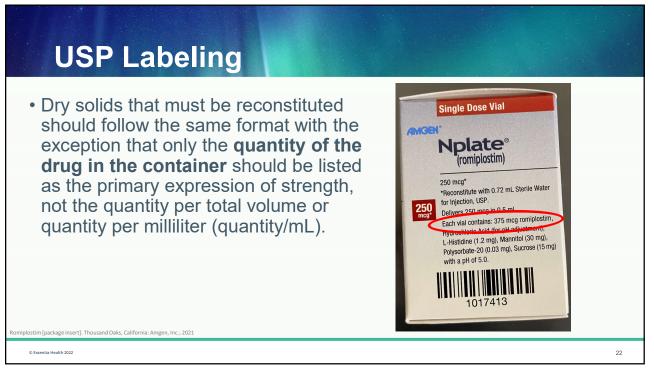
	THE SCIENCE AND DF CLINICAL NUTRITION real and Enteral Nutrition	in Join / Renew Donate Member Connect St	ore <u>Phil Ayers</u> v Q
Public Policy 🗸 Con	tinuing Education 🗸 Guidelines & Clinical Reso	Aburces 🗸 Research 🗸 Membership 🗸 Ab	out ASPEN 🗸
		Clinical Resources and clinical resources to assist practitioners in providing Malnutrition Solution Center	re This Page <
» COVID-19 Resources	Books	Enteral Nutrition Resources	
» Books	Clinical Practice Library	Parenteral Nutrition Resources	
» Clinical Practice Library	Journals	Resources for Patient Populations or Healthcare Management	



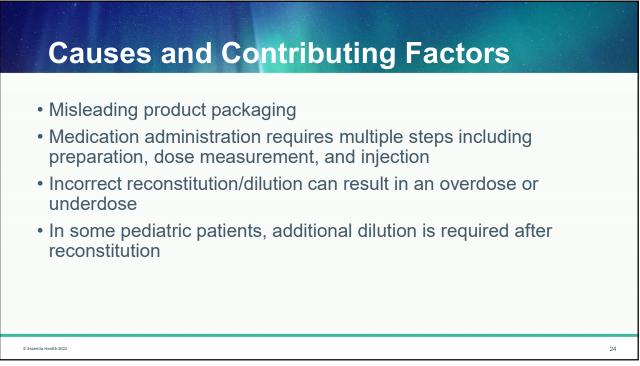


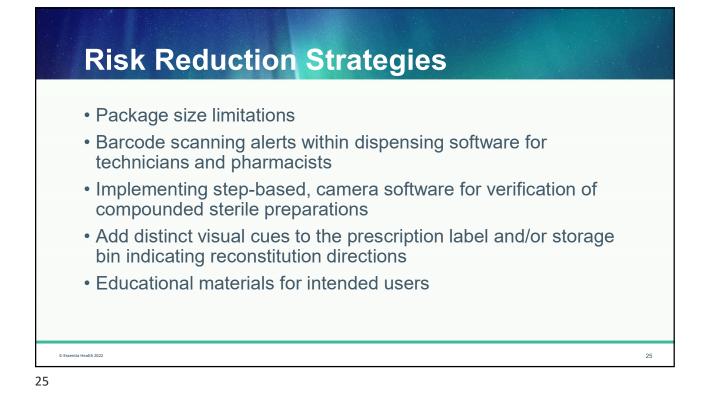






Vial Size	Active drug in vial	Reconstitution	Final Concentration	Overdose Potential (%)	Cost of Vial (Unit Price)
125 mcg	230 mcg	0.44 mL of SWFI	125 mcg/0.25 mL	84%	\$1,074.96
250 mcg	375 mcg	0.72 mL of SWFI	250 mcg/0.5 mL	50%	\$2,149.90
500 mcg	625 mcg	1.2 mL of SWFI	500 mcg/mL	25%	\$4,299.79





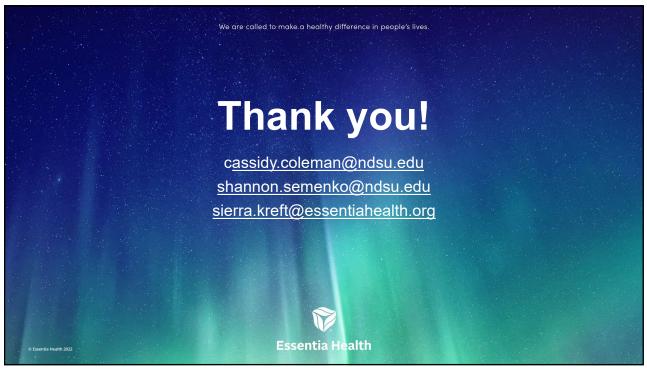
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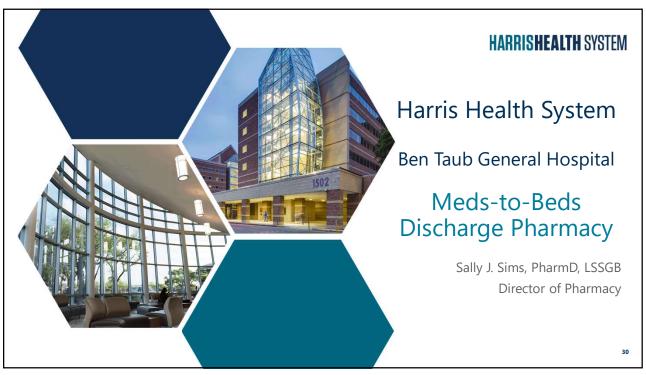
## **Building an Orderable Map**

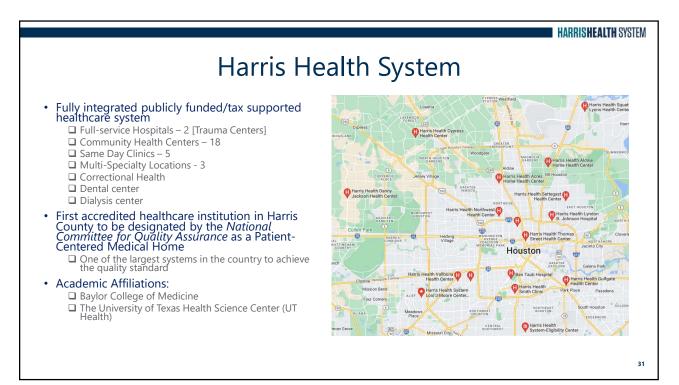
Vial cost (\$)	1351.27	2702.52	5405.02	
Labeled N-Plate				
vial size (mcg)	125	250	500	
Actual N-Plate				
vial size (mcg)	230	375	625	
= 230</td <td>1</td> <td>0</td> <td>0</td> <td>\$ 1,351.27</td>	1	0	0	\$ 1,351.27
231-375	0	1	0	\$ 2,702.52
376-625	0	0	1	\$ 5,405.02
-				

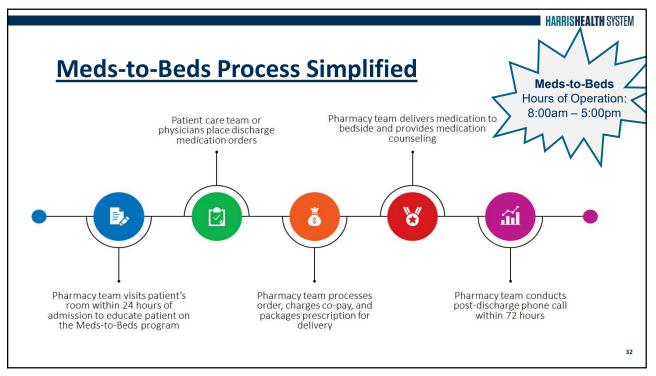
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#### **Pediatric Dilution Education Calculated Patient** Strength\* Reconstitute with Dilute with Normal **Final Concentration** Dose Sterile Water\*\* Saline\*\*\* Is the calculated patient dose less than 23 mcg? Calculated Dose 0.44 mL 125 mcg Not Required 500 mcg/mL greater than or 0.72 mL 250 mcg Not Required equal to 23 mcg 1.2 mL Not Required 500 mcg 125 mcg 0.44 mL 1.38 mL Calculated Dose 125 mcg/mL Reconstitute Romiplostim Reconstitute Romiplostim with Sterile Water for Injection, USP, less than 23 mcg with Sterile Water for 250 mcg 0.72 mL 2.25 mL Injection, USP Dilution is NOT AND then dilute with 0.9% Sodium Chloride Injection, USP 3.75 mL required 500 mcg 1.2 mL \*Vial contains overfill to ensure delivery of labeled vial strength. \*\*Add Sterile Water for Injection, USP directly to the vial. \*\*\* Add 0.9% Sodium Chloride Injection, USP directly to the vial. Romiplostim [package insert]. Thousand Oaks, California: Amgen, Inc.; 2021 © Essentia Health 2022 28



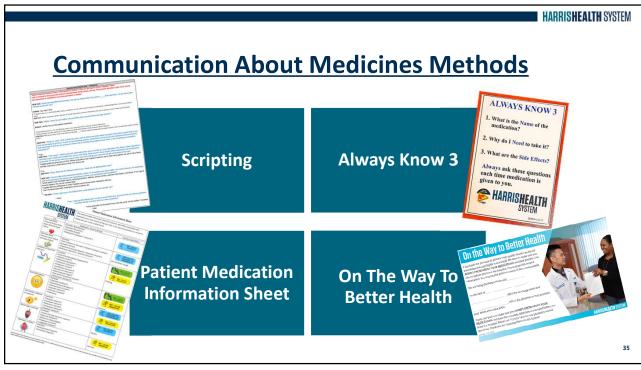




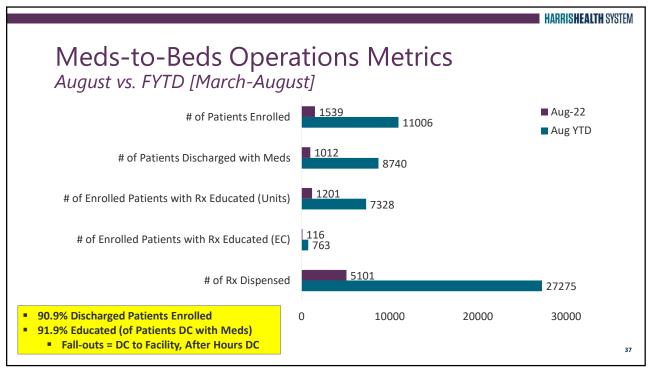


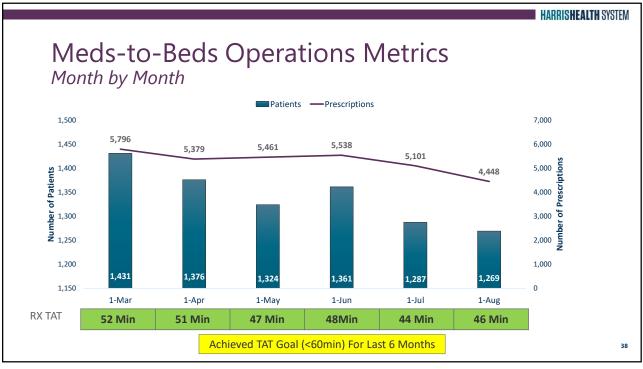
		HARRIS <b>HEALTH</b> SYSTEM
Program Goals		
<u>Sustained</u> improvement in HCAHPS patient satisfaction scores pertaining to communication about medications	Increased patient adherence and comprehension of medications	Reduction in 30-day readmission
		33
33		
		HARRIS <b>HEALTH</b> SYSTEM

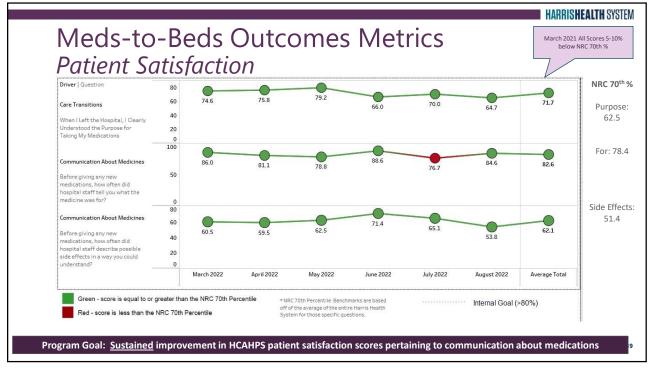
Н		HPS Survey – Focus	Qu	iestions	
"Have I educe	ated y	ou about your medications to your satisf	action	? We ALWAYS want you to know about you	r medications."
		Communication About Medicines		Care Transitions	
	12.	During this hospital stay, were you given any medicine that you had not taken before?	21.	When I left the hospital, I had a good understanding of the things I was	
		¹□ Yes		responsible for in managing my	
		<sup>2</sup> No → If No, Go to Question 15		health. <sup>1</sup> Strongly disagree	
	13.	Before giving you any new medicine, how often did hospital staff tell you what the medicine was for?		<sup>2</sup> Disagree <sup>3</sup> Agree	
		<sup>1</sup> Never		<sup>4</sup> Strongly agree	
		<sup>2</sup> □ Sometimes <sup>3</sup> □ Usually <sup>4</sup> □ Always	22.	When I left the hospital, I clearly understood the purpose for taking each of my medications.	
	14.	Before giving you any new medicine, how often did hospital staff describe possible side effects in a way you could understand?		<sup>1</sup> □ Strongly disagree <sup>2</sup> □ Disagree <sup>3</sup> □ Agree	
		<sup>2</sup> Sometimes		<sup>4</sup> Strongly agree	
		<sup>3</sup> □ Usually <sup>4</sup> □ Always		I was not given any medication when I left the hospital	34

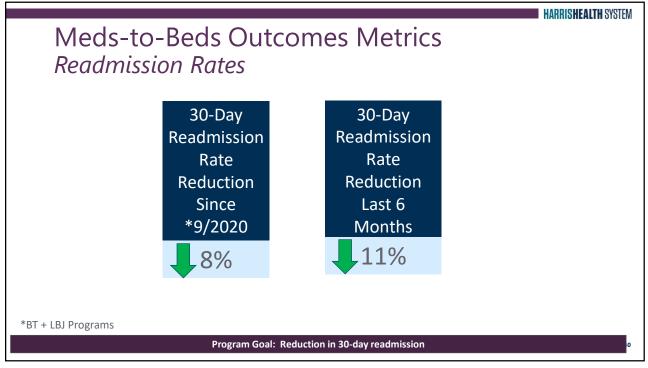


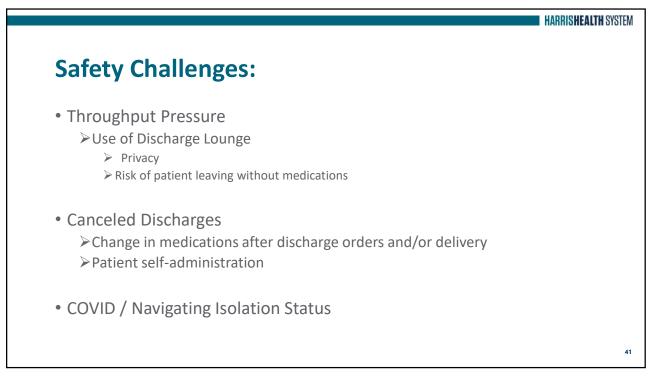




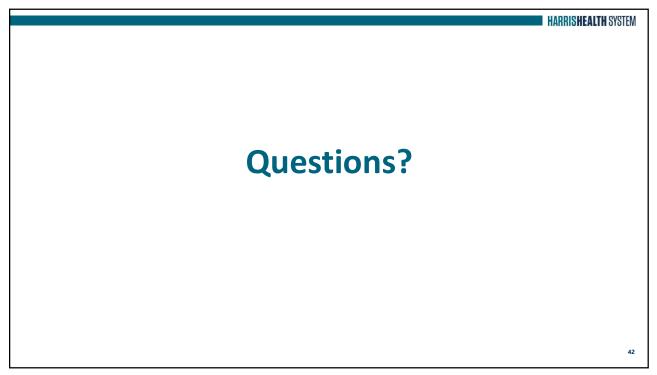












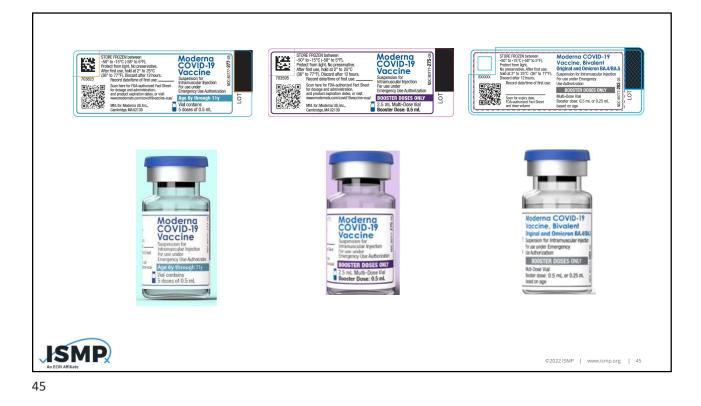


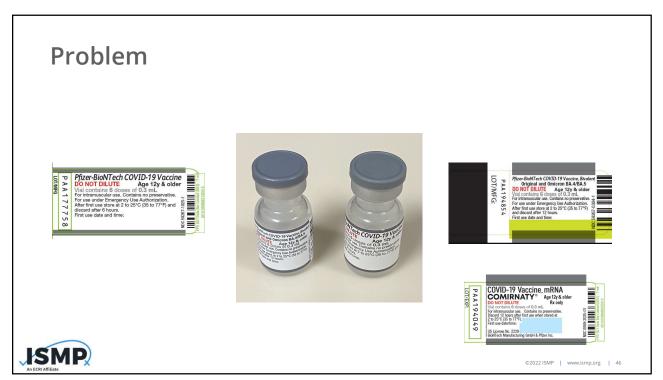
### ISMP Update MSOS Briefing September 2022

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

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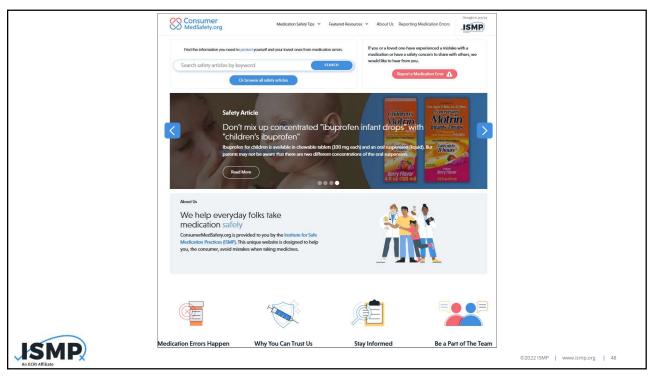


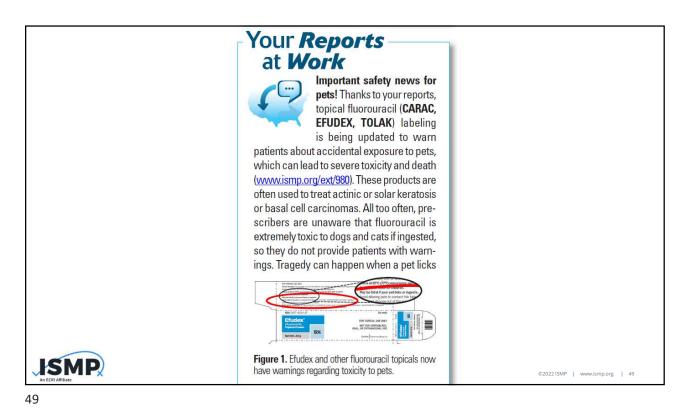




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AT		62	022 ISMP   www.ismp.org   47







ALERTS ABOUT CONTACT NEWS DONATE ISMP ers (2 1 📌 Q Human Factors Role and Considerations in **Drug Labeling and Packaging** an error can be described as a failure of a common sequence of f Human error can be described as a failure of a common sequence of psychological functions that are basics to fuman behavior. This failure involves perception of the situation, the way these stimuli are interpreted, and the execution of planned actions. Human factors in healthcare considers the way in which professionals interact with medications and medication technology within their environment, and how this cognition can influence human behavior. This failure involves the medication labeles can be a contributing factor to medication-related events. Tuesday, September 27, 2022 from 1:00 -2:00 PM ET possibly even leading to harmful patient outcomes. Understanding how imitations of human performance in combination with error prone lab designs contribute to these events is vital to providing support to individuals working in complex medication systems. Using an adverse event case example, this program will describe the differences between active and latent failures, compare a trisk behaviors and human error displayed during an actual event, and describe performance shaping factors known to influence safe behaviors with medication use. Faculty from the Division of Medication Error Prevention and Analysis (DMEPA) will trom the Division of Medication Error Prevention and Analysis (DMEPA) will describe their work menhancing human performance and the prevention of medication errors using specialized pre-market and post-market activities addressing human factor vulnerabilities. Actions taken to address recent medication error perost will be explored, as well as the role of health care practitioners in identifying, preventing, and mitigating medication errors. https://www.ismp.org/events/human-factors-role-and-considerations-drug-labeling-and-packaging **ISMP** ©2022 ISMP | www.ismp.org | 50

