

# MSOS Member Briefing

## September 2024

### MSOS Member Briefing September 2024

Moderated by: E. Robert Feroli, PharmD, FASHP



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#### **Strategic Reduction of *Inpatient* Hypoglycemic Events: Robley Rex VA Medical Center**

- 
- Sathya Krishnasamy, MD
  - Professor of Medicine
  - Fellowship Training Program Director
  - Division of Endocrinology, Metabolism, and Diabetes
  - University of Louisville
  - Staff Endocrinologist and Clinical Researcher
  - Robley Rex VAMC
  - Louisville, KY



**VA**

U.S. Department  
of Veterans Affairs

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### Epidemiology of Inpatient Hypoglycemia (BG<70 mg/dL)

#### › Hypoglycemia contributing factors:

- **Patient factors:** CKD, AKI, sepsis, duration/type of DM, hypoglycemia unawareness, low BMI, organ failure, baseline insulin treatment, advanced age, malignancy.
- **Nutritional factors:** coordination of meal delivery and blood glucose monitoring/prandial insulin administration, reduced oral intake, NPO/liquid diets, tube feeding regimen changes.
- **Systemic factors:** communication gaps across treatment teams, steroid use, failure to adjust home regimen, use of sliding scale vs prandial insulin coverage.

#### › Morbidity/mortality of inpatient hypoglycemia:

- Death.
- QT interval prolongation.
- Cerebral ischemia.
- Increased length of stay.
- Increased healthcare costs.
- Metrics

Eiland L, Goldner W. Inpatient Hypoglycemia: A challenge that must be addressed. *Curr Diab Rep.* 2014;14:445.  
Moen MF, Zhan M. Frequency of hypoglycemia and its significance in chronic kidney disease. *Clin J Am Soc Nephrol.* 2009; 4(6):1121-1127.  
Pratiwi C, Mokoagow MI, Kshanti IAM, Soewondo P. The risk factors of inpatient hypoglycemia: A systematic review. *Heliyon.* 2020;6(5):e03913.

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### Historical Context of Our Program

- › 2019: multidisciplinary team completed NCPS Glycemic PSAT (July 2019 – May 2020) (Medicine, Endocrinology, Diabetic Educators, Nursing, Informatics, Patient Safety, Pharmacy).
- › PSAT criteria were derived from 2018 Standards of Medical Care in Diabetes and included the following:<sup>1</sup>

- Goal: avoid glucose extremes *during inpatient hospital stay*, especially preventing hypoglycemia (blood glucose readings <70 mg/dL).
- A1C monitoring for all inpatients with diabetes or hyperglycemia.
- Nurse-driven hypoglycemia protocol.
- Avoidance of split, premixed insulin.

- Basal plus correction regimen after 24 hours vs sliding scale regimens.
- Double verification process for inpatient insulin administration.
- Evidence-based protocols for:
  - › Inpatients receiving concentrated insulin.
  - › Inpatients with insulin pumps.
- Diabetes education.

<sup>1</sup>Standards of medical care in diabetes - 2018. *American Diabetes Association.* 2018;41(suppl 1).  
Diabetes care in the hospital: Standards of medical care in diabetes—2019. *Diabetes Care.* 2019;42(suppl 1):S173-S181.

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### Historical Context of Our Program

- › **2021 Medication Aggregate:** Hypoglycemic Events (BG≤45) Among ICU Patients Receiving Glycemic Agents.
- › Supporting data:
  - 18 hypoglycemic events (BG≤45) in ICU during previous 12 months; **4 events since implementation of Hypoglycemia Protocol 5 months previously.**
- › Findings:
  - The lack of a standardized approach to managing blood glucose among inpatients with dysglycemia allowed ordering of frequent insulin dose corrections which resulted in life-threatening hypoglycemic events requiring prolonged, emergent interventions.
- › Actions:
  - Develop glycemic management order sets.
  - Monitor/report monthly D50 usage.
  - **Initiate Glycemia Team to review ALL inpatient events of BG≤45; initiated May 2021.**

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Hypoglycemia		RR VAMC DATA COLLECTION INPATIENT HYPOGLYCEMIC EVENTS (BG<45)	
<b>Type</b>	<b>Cause</b>	<b>FULL NAME:</b> <b>AGE:</b> <b>AGE AT ONSET DM:</b> <b>MOST RECENT A1c:</b>	<b>FULL SS#:</b> <b>INPATIENT UNIT:</b> <b>PERTINENT COMORBIDITIES</b> Acute pancreatitis Adrenal insufficiency Anemia CKD Chronic pancreatitis Hearing impairment Heart failure Other (indicate):
Primary	when it is the primary cause of admission	<b>DIABETES</b> Type 1 No Type 2	History of gastric bypass Hypopituitarism Hyperkalemia Liver failure Malignancy Sepsis Visual impairment
Secondary	when it occurs during treatment	<b>PERTINENT MEDICATIONS</b> Bactrim/Septra Beta Blocker ETOH Norpace Opioids	<b>ADMITTING DIAGNOSIS/ES:</b> <b>NUTRITIONAL STATUS</b> NPO Recent procedure Tube feeding
Iatrogenic	overly aggressive treatment of hyperglycemia accompanied by a failure of the body to maintain a decrease in blood glucose	Quinine Steroids Sulfonylureas Teprotumumab-trbw Other (indicate):	<b>HOME GLYCEMIC REGIMEN</b> <b>INPATIENT GLYCEMIC REGIMEN</b>
Spontaneous	patients with multiple comorbidities, malnutrition, and a history of drug consumption which are predisposing factors for hypoglycemia	<b>EVENT DESCRIPTION</b> (date, time, blood glucose level, glycemic management received during previous 24 hours, symptoms, actions, provider notification, orders, patient response to treatment):	
Spurious	False	<b>BLOOD GLUCOSE DURING PREVIOUS 24 HOURS (INCLUDE TIME):</b>	
		<b>ADMITTING SERVICE</b> Critical Care Endocrine Medicine Surgery Other (indicate):	<b>SERVICE MANAGING GLYCEMIA</b> Critical Care Endocrine Medicine Surgery Other (indicate):

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### Demographics

Ave age of patients (yrs)	63.65
% above 65 yrs of age (%)	50%
<b>Type of diabetes:</b>	
• T2DM	60%
• T1DM/LADA	10%
• T3c	5%
• not diabetic	25%
CKD	~45%
AKI	6
Malignancy	3
Sepsis	5

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### RCA of Events 2021 to 2024

- Correction scale.
- Bedtime correction scale.
- Basal and correction (not starting prandial after 48 hours).
- Insulin stacking.
- Nutritional status and NPO (communication).
- Glucocorticoids - insulin mismatch.
- Premix insulin.
- Failure to address insulin regimen post surgery in patients with high risk of hypoglycemia.
- Duplication of basal (admission night and next AM).
- Hyperkalemia treatment protocol especially in CKD.
- **Spurious.**
- **Sepsis.**
- Delay in consulting endocrinology for insulin pump

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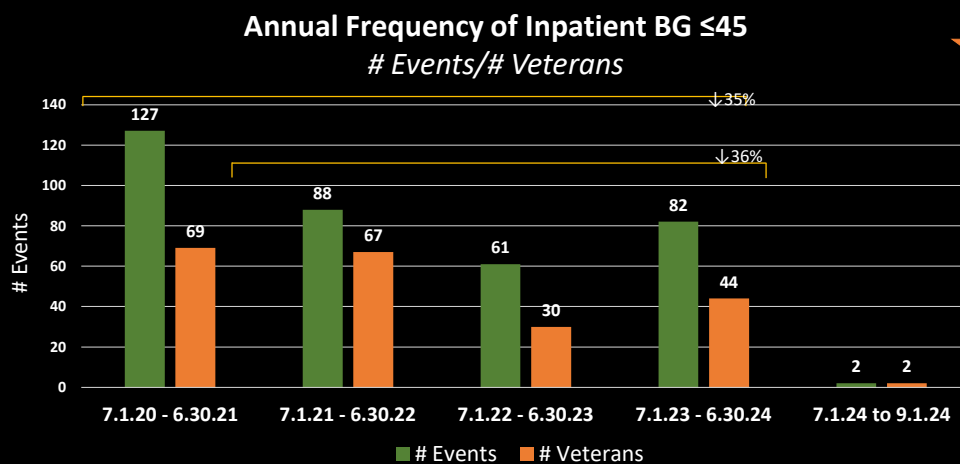
### Implementing Hypoglycemia Safety Protocols

- ▶ Restricting use of **U500** concentrated insulin to Endocrine Service in both inpatient and outpatient settings.
- ▶ Modified bedtime correction scale to start from 201 mg/dL rather than 151 mg/dL.
- ▶ Discontinuation of home oral diabetes agents on admission.
- ▶ No Premix insulin while inpatient.
- ▶ Endocrine referral for **all** insulin pump patients.
- ▶ Utilization of inpatient diabetes education resources (metrics).
- ▶ Determine type of diabetes and address nutrition.
- ▶ **Limit excessive reliance on sliding/correction scale (house staff didactic sessions).**
- ▶ **Use appropriate CS according to TDD insulin.**
- ▶ **Matching prandial coverage to mealtimes.**
- ▶ **ENCOURAGE EFFECTIVE COMMUNICATION** between the teams involved in the care of the patient.
- ▶ **Link GC use with an alert to inform prescribing team of dose changes.**
- ▶ **Modification of the glycemic regimen, when the nutrition status changes (NPO/tube feed/TPN).**
- ▶ **Avoid insulin stacking /Orders for daily insulin when pt admitted late PM.**
- ▶ **Creation of INSULIN PUMP SOP.**
- ▶ **Weight and renal function-based dosage of insulin in the management of hyperkalemia (2012 Tobin et al).**

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### Clinical Outcomes Achieved Over 3 Years

#### 35% Fewer Inpatient Events Involving 36% Fewer Inpatients



Data on File. RR VA Medical Center.

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**Shades** of Hypoglycemia:  
From Unreal to Real,  
From **Darkness** to **Light**

### Acknowledgements:

Louisville Robley Rex VA Medicine Service &  
VA Executive Leadership.

Patient Safety Manager: Kim Reibling, MSN, RN.

University of Louisville Division of Endocrinology Fellows:  
Drs Khurram, Sibai, and Kulkarni.

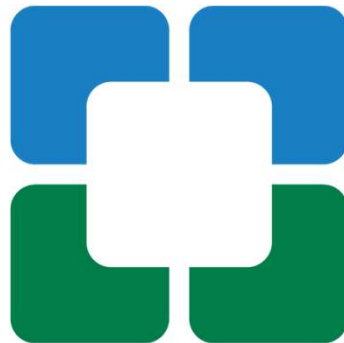
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## Development of an Alteplase Guide

Rabih Dabliz, Pharm.D., MA, FISMP, CPHQ, CPPS  
Senior Manager, Quality & Medication Safety  
Department of Pharmacy Services

26 September 2024



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### tPA Delivery by Syringe Driver Process

- Explored the delivery of tPA by syringe drive instead of bag to:
  - Shorten delivery time
  - Minimize drug amount lost in line
- Failures can lead to harm to:
  - Patients through inappropriate dosing and delay in treatment
  - The organization both financially and reputationally



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### Multidisciplinary Team

#### Executive Sponsor

Madhu Sasidhar

#### Physician Leader

Victoria Mifsud

#### Facilitator

Nicolas Turrin

#### Stroke Coordinators

Ann Sullivan

Rhamzell Pingol

#### Nurse Education

Minna Kemppainen

Ciara Rooney

Prudence Skene

Mark McCarthy

Lucie Pelunkova

#### Anesthesia

Charles Ahene

#### Nursing

Vitor Moreira

Elizabeth Gilmore

Jincy Pappy

#### Pharmacy

Rabih Dabliz

Ziad Sadik

Enas Elkrewi

Zakieh Abuelkhair

Eman Shaheen

Mariam Juma

#### Quality Department

Mary Jane Capp

Ijeoma Kareem

Nader Khamis

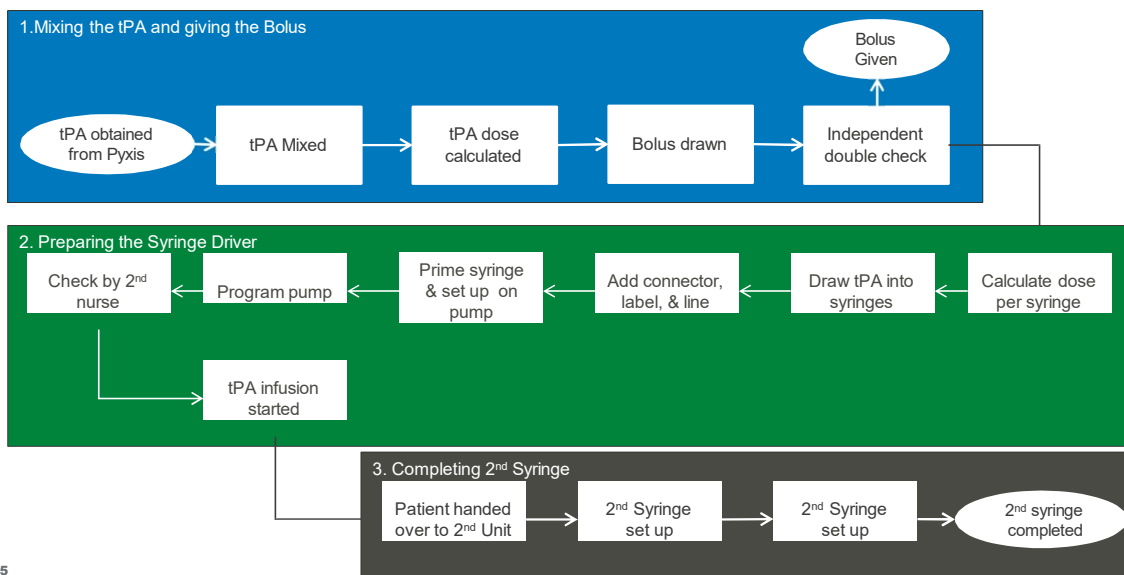


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### tPA Syringe Driver Process



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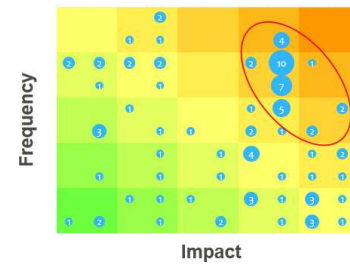
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### Failure Analysis & Prioritization

**94 Potential Failures** were identified and rated on a ten-point scale for:

1. Impact (severity)
2. Occurrence (frequency)



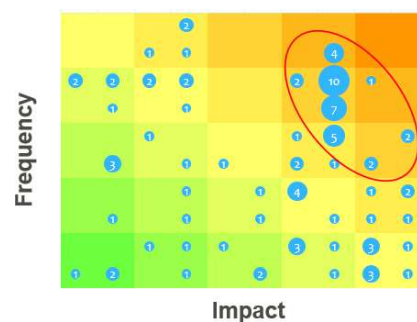
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### Failure Analysis & Prioritization

Steps	Sum of RPN
<b>1. Mixing of tPA and Bolus</b>	<b>572</b>
Bolus drawn	90
Bolus injected	136
Dose calculated	81
Independent Double check/Checklist for Bolus	113
Obtain tPA Vial from Pixis	62
tPA mixing	90
<b>2. Preparing syringe pump</b>	<b>1454</b>
Add needleless connector, label, line	216
Calculating dose and syringe number	268
Check by 2nd nurse - Syringes, pump	144
Draw up medication into syringes	396
Infusion started	60
Prime syringe, set up pump	256
Program pump	114
<b>3. Completing 2nd syringe</b>	<b>985</b>
2nd Infusion completed	8
2nd Infusion Started	46
Patient Handed over to Unit	336
Setting up 2nd Syringe	595
<b>4. General Failure</b>	<b>104</b>
Inpatient Failure	104
<b>Grand Total</b>	<b>3115</b>



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### High-Risk Themes

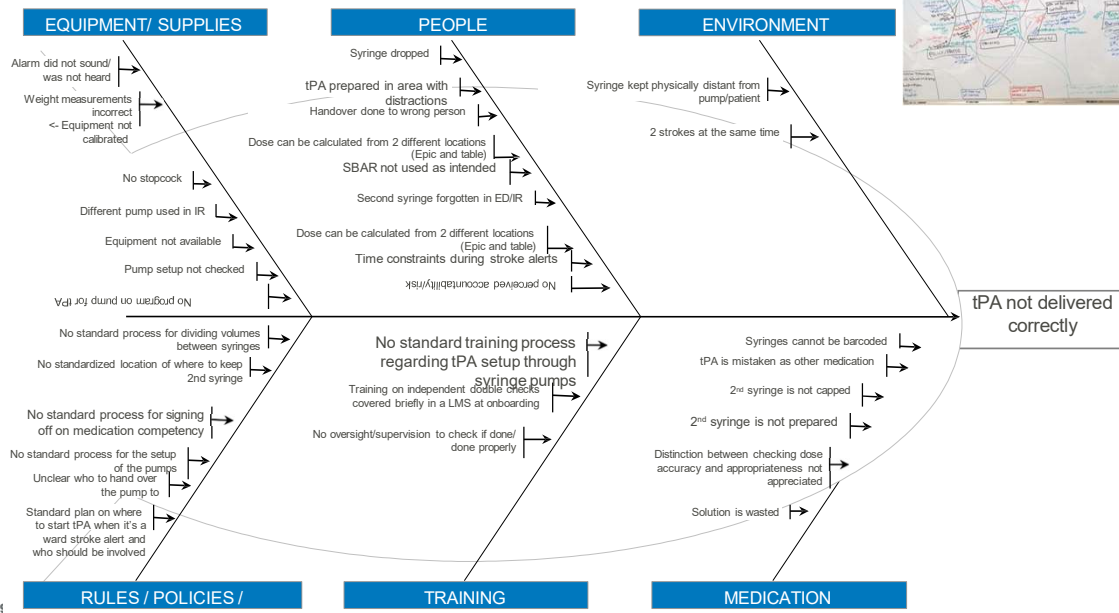
- Independent Double Check/ Check (Syringe/pump) not done
- Wrong dose, number of syringe, volume, too much/not enough tPA in 2<sup>nd</sup> syringe, prepared for wrong patient
- Incorrect syringe size used
- Solution contaminated
- 2<sup>nd</sup> Syringe lost/not prepared
- tPA wasted, set up leaked, syringe pressed on accidentally
- Solution foams
- Infusion pushed manually, not programmed properly, over priming, wrong set up
- Information, syringe, pump not handed over
- Late start for 2<sup>nd</sup> syringe
- Pharmacy delivers vials instead of syringes to ward

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### ROOT CAUSE FISHBONE



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### ROOT CAUSE ACTION PLANNING

Root Cause/Contributing Factors/ Other Problems Identified	Recommended Actions
No standard process for <b>dividing volumes</b> between syringes	Less than 50mLs – one syringe to be used/ Divide dose by half for anything above 50mLs
Hard to keep up ward <b>nurses competency</b> on how to calculate doses and prepare the tPA	All ED and Stroke alerts nurses to be trained annually on the process
<b>No standardized location</b> of where to keep 2nd syringe	2 <sup>nd</sup> Syringe will be put in bag and hung on syringe driver
No standard process for the <b>setup of the pumps</b>	1 page SOP, Simulation in ED to test, pump standardization (OR), Ensure availability
No standard <b>training process</b> regarding tPA setup through syringe pumps	<b>Develop training program, Caregiver Guide, and alteplase Kit</b>
<b>Handover process</b> not followed consistency	Standardize handover of tPA pumps include training: Interventional Radiology, L6 ICU
Standard plan on <b>where to start tPA</b> when it's a ward stroke alert and who should be involved is not used often , so can be forgotten	Will Explore with ED and Imaging team of potentially preparing tPA in CT area
No standard process for signing off on medication <b>competency for independent double check</b>	Develop a medication competency for independent double check

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TOOLS  
DEVELOPED



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**CHANGE IN PRACTICE COMMUNICATION**

**كليفاند كلينك أبوظبي**  
Cleveland Clinic Abu Dhabi  
Brought to you by Mahabadi

**WHAT IS CHANGING?**  
Tissue Plasminogen Activator (tPA) or alteplase (ACTILYSE®) for the indication of stroke will now be administered via a syringe driver rather than an intravenous bag.

**WHY IS IT CHANGING?**  
Because "time is brain", alteplase (tPA) must be administered as soon as possible for better outcome to our patients, and internal simulation has shown that this can be achieved by administration via a syringe instead of a bag.

**WHEN IS IT CHANGING?**  
January 27, 2021 starting 01:00 PM.

**WHAT DOES THIS MEAN TO YOU?**  
For Physicians, there is no change to how you order the medication in EPIC  
For Pharmacists, you will no longer have to prepare alteplase (tPA) for inpatient stroke  
For Nurses, alteplase (tPA) will be stored and started in either ED or imaging and administered via a syringe driver.


**ANY REFERENCES AVAILABLE?**  
An alteplase (tPA) preparation and administration guide has been developed and will be:  
1- Posted in dedicated locations in ED and Imaging  
2- Linked to the Medication Administration Record in EPIC

For more information, please contact the Stroke Coordinator via Vocera

**ALTEPLASE (tPA) ADMINISTRATION PROCESS FOR STROKE**

	IF STROKE OCCURS IN		
	EMERGENCY DEPARTMENT	ACUTE CARE	INTENSIVE CARE/ PACU, Cath lab, IR
Which Pyxis do I remove the tPA from?	ED	Imaging	Imaging
Who prepares the tPA?	ED Nurse #1	L13 Stroke Alert Nurse	L6 Stroke Alert Nurse
Who double checks the tPA?	ED Nurse #2	ED Nurse	ED Nurse
Who administers Bolus Dose & Syringe #1	ED Nurse #1	L13 Stroke Alert Nurse	L6 Stroke Alert Nurse
Who administers Syringe #2 (if needed)	L6 ICU Nurse or IR Nurse	L6 ICU Nurse or IR Nurse	L6 ICU Nurse or IR Nurse

NOM= Nursing Operations Manager



Quality and Patient Safety Institute

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## ALTEPLASE (tPA) KIT

Pre-assembled kit containing:

1. All required consumables for tPA administration
2. Pre-printed labels for use on syringes and lines

**ALTEPLASE KIT**

PATIENT ID

This kit contains:

- ☐ Alcohol wipes x 2
- ☐ Sterile Saline Flush Syringe (10 mL) x 2
- ☐ Luer Lock Syringe (10 mL) x 1
- ☐ Luer Lock Syringe (50 mL) x 2
- ☐ SmartSite Needleless Connector x 1
- ☐ Red Caps x 2
- ☐ SmartSite Transfer Device x 2
- ☐ Alaris Syringe Pump Administration Set (with pressure sensing disc) x 1

Prepared By \_\_\_\_\_

SEALED

SEALED

SEALED

SEALED

**ALTEPLASE LABELS**

**BOLUS DOSE**

**HIGH ALERT**  
**ALTEPLASE 1 mg/mL**  
 \_\_\_\_\_ mg **BOLUS**

**CONTINUOUS DOSE**

**HIGH ALERT**  
**ALTEPLASE 1 mg/mL**  
 \_\_\_\_\_ mg

**HIGH ALERT**  
**ALTEPLASE 1 mg/mL**  
 \_\_\_\_\_ mg

**LINES**


**HIGH ALERT**  
**alteplase**

**HIGH ALERT**  
**alteplase**

**HIGH ALERT**  
**alteplase**

**HIGH ALERT**  
**alteplase**

Alteplase Labels Kit



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**DOSING INSTRUCTIONS**

ACTUAL BODY WEIGHT must be used when dosing alteplase

Total Dose: 0.9 mg/kg (Maximum = 90 mg)  
 IV Bolus: 0.09 mg/kg (10% of total dose) over 1 minute  
 IV Infusion: 0.81 mg/kg (90% of total dose) over 2 hours

**BEFORE ADMINISTRATION OF ALTEPLASE, CHECK FOR ALL OF THE FOLLOWING:**

- Blood pressure confirmed to be **LESS** than 180/110 mmHg
- Contraindications to tPA
- tPA consent obtained
- tPA order placed in EPIC
- Independent double check of Dose & Volume by 2 Nurses
- Syringes are labeled and numbered
- Registered Nurse/Physician has given final verbal confirmation to administer tPA

**RECONSTITUTION INSTRUCTIONS**

Each alteplase (Actilyse®) treatment unit contains:

- 50 mg alteplase and 1 L
- 50 mg sterile water for injection and 1 L
- Flexible set x 1

- Open the transfer device and risk then carefully cover the injection port of each vial with an alcohol swab.
- Insert one end of the transfer device into the sterile water for injection (SWI) vial.
- Push the powder containing vial (Alteplase) down onto the other end of the transfer device.
- Insert the risk so that SWI flows into the Alteplase vial. **THIS CAN TAKE UP TO 5 MINUTES.**
- Remove transfer device and empty SWI vial. They can be disposed of.
- Gently swirl the reconstituted Alteplase to dissolve the powder. **DO NOT SHAKE.**
- If there are bubbles, let the solution stand undisturbed for five minutes to allow for the bubbles.
- Withdraw bolus dose using a 1 mL syringe and administer by hand only once continuous infusion has been set-up.
- Remove remaining dose using one or two 10 mL syringes. Draw down on flow line using 10 mL syringe. Flush connector to syringe #1.

**ALTEPLASE (ACTILYSE®)**  
Preparation & Administration Guide

**BELOW 100 KG**

**100 KG AND ABOVE**

015      Alteplase Preparation & Administration Guide      Version 1 | October 2020

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# Switched to B. Braun Pumps

- Updated Caregiver Guide (Poster)
- Introduced a new layout for tPA kit (A4)

## July 2024

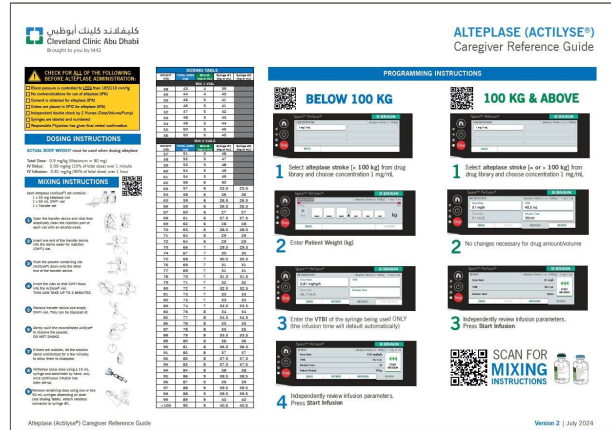
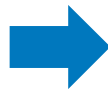
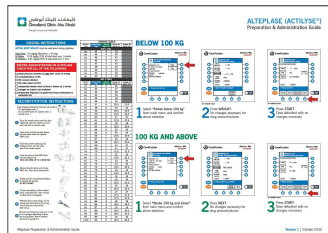
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### REVISED CAREGIVER GUIDE

- Re-designed checkbox to align with standard warning colors
- Introduced QR codes for medication mixing and pump programming



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**CHECK FOR ALL OF THE FOLLOWING BEFORE ALTEPLASE ADMINISTRATION:**

- ☐ Blood pressure is confirmed to be LESS than 185/110 mmHg
- ☐ The contraindications for use of alteplase (tPA)
- ☐ Consent is obtained for alteplase (tPA)
- ☐ Orders are placed in EPIC for alteplase (tPA)
- ☐ Independent double check by 2 Nurses (Dose/Volume/Pump)
- ☐ Syringes are labeled and numbered
- ☐ Responsible Physician has given final verbal confirmation

#### DOSING INSTRUCTIONS

ACTUAL BODY WEIGHT must be used when dosing alteplase

Total Dose: 0.9 mg/kg (Maximum = 90 mg)

IV Bolus: 0.09 mg/kg (10% of total dose) over 1 minute

IV Infusion: 0.81 mg/kg (90% of total dose) over 1 hour

#### MIXING INSTRUCTIONS

Each alteplase (Actilyse®) vial contains:  
1 x 50 mg alteplase vial  
1 x 50 mL SWFI vial  
1 x Transfer set

1. Open the transfer device and vials then

aseptically clean the injection port of

each vial with an alcohol swab.

2. Insert one end of the transfer device

into the sterile water for injection

(SWFI) vial.

3. Push the plunger containing vial

alteplase® down onto the other

end of the transfer device.

4. Insert the vials so that SWFI flows

into the alteplase® vial.

THIS CAN TAKE UP TO 2 MINUTES.

5. Remove transfer device and empty

SWFI vial. They can be disposed in

biohazard container.

6. Verify each the reconstituted Actilyse®

discolor the powder.

DO NOT SHAKE.

7. If there are bubbles, let the solution

stand undisturbed for a few minutes

to allow them to dissipate.

8. Withdraw bolus dose using a 10 mL

syringe and administer by hand, only

over continuous infusion has

been set up.

9. Remove remaining dose using one or two

20 mL syringes depending on dose

(see Dosing Table). Attach reusable

connector to syringe #1.

DOSING TABLE					
Weight (kg)	Total Dose (mg)	Bolus (mg)	Syringe #1 (mg or mL)	Syringe #2 (mg or mL)	Syringe #3 (mg or mL)
MIX 1 VIAL					
48	43	4	39		
49	44	4	40		
50	45	5	41		
51	46	5	41		
52	47	5	42		
53	48	5	43		
54	49	5	44		
55	50	5	45		
56	50	5	45		
MIX 2 VIALS					
57	51	5	46		
58	52	5	47		
59	53	5	48		
60	54	5	49		
61	54	5	49		
62	56	6	50		
63	57	6	51		
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80	72	7	65		
81	73	7	66		
82	73	7	66		
83	74	7	67		
84	75	8	67		
85	77	8	69		
86	78	8	70		
87	78	8	70		
88	79	8	71		
89	80	8	72		
90	81	8	73		
91	82	8	74		
92	83	8	75		
93	83	8	75		
94	84	8	76		
95	86	9	77		
96	87	9	78		
97	88	9	79		
98	88	9	79		
99	89	9	80		
>100	90	9	81		

#### PROGRAMMING INSTRUCTIONS

**BELOW 100 KG**

1. Select alteplase stroke [ < 100 kg] from drug library and choose concentration 1 mg/mL

2. Enter Patient Weight (kg)

3. Enter the VTBI of the syringe being used ONLY (the infusion time will default automatically)

4. Independently review infusion parameters. Press Start Infusion

**100 KG & ABOVE**

1. Select alteplase stroke [= or > 100 kg] from drug library and choose concentration 1 mg/mL

2. No changes necessary for drug amount/volume

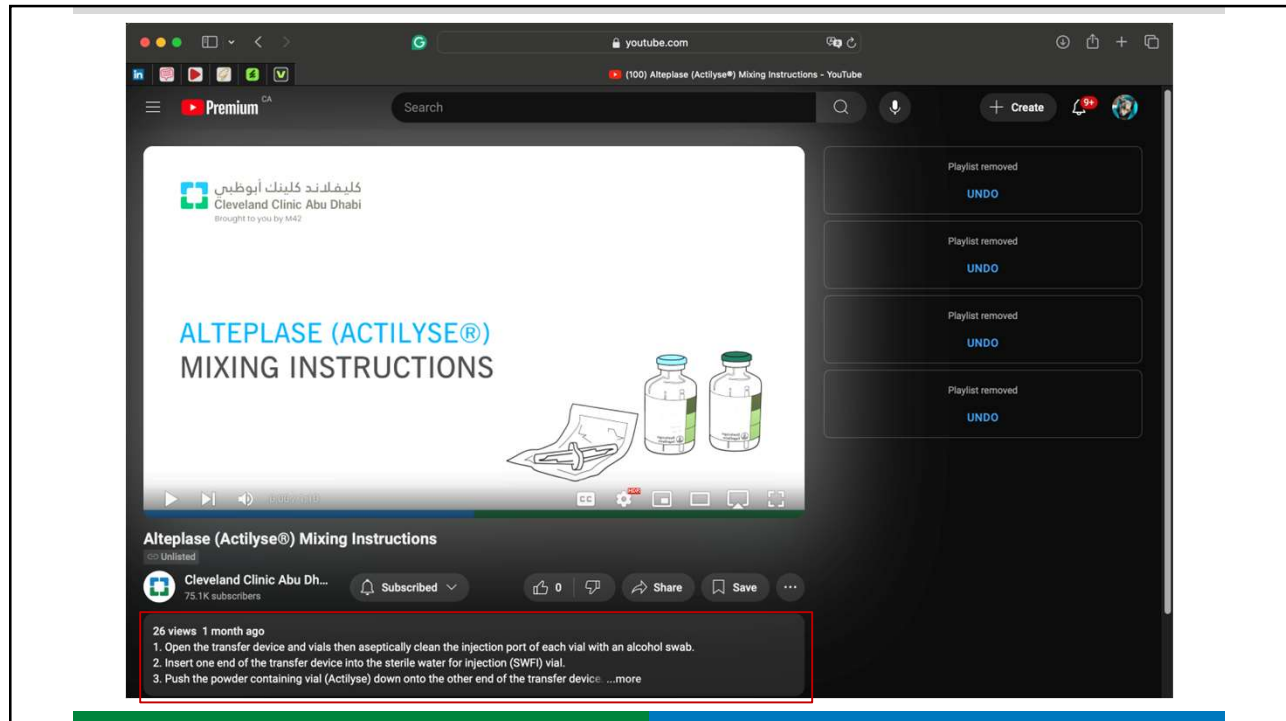
3. Independently review infusion parameters. Press Start Infusion

SCAN FOR MIXING INSTRUCTIONS

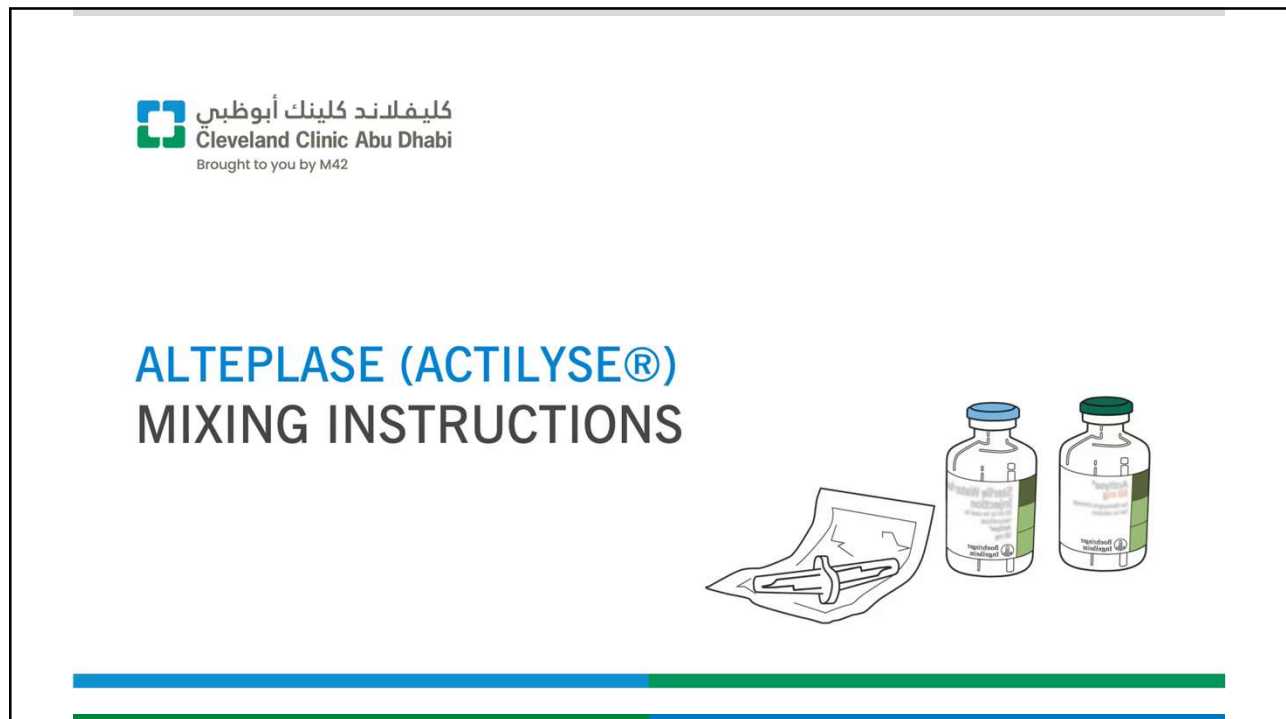
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**! CHECK FOR ALL OF THE FOLLOWING BEFORE ALTEPLASE ADMINISTRATION:**

- ☐ Blood pressure is controlled to LBS less than 185/110 mmHg
- ☐ No contraindications for use of alteplase (tPA)
- ☐ Consent is obtained for alteplase (tPA)
- ☐ Orders are placed in CPOE for alteplase (tPA)
- ☐ Independent double check by 2 Nurses (Dose/Volume/Pump)
- ☐ Syringes are labeled and numbered
- ☐ Responsible Physician has given final verbal confirmation

**DOSING INSTRUCTIONS**

ACTUAL BODY WEIGHT must be used when dosing alteplase

Total Dose: 0.9 mg/kg (Maximum = 90 mg)  
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**MIXING INSTRUCTIONS**

Each alteplase (Actilyse®) vial contains:  
 1 x 50 mL saline vial  
 1 x 50 mL SWFI vial  
 1 x Transfer set

- Open the transfer device and vials then carefully clean the injection port of each vial with an alcohol swab.
- Insert one end of the transfer device into the sterile water for injection (SWFI) vial.
- Push the powder containing vial (Actilyse®) down into the other end of the transfer device.
- Insert the vial so that SWFI flows into the Actilyse® vial. **THIS CAN TAKE UP TO 2 MINUTES.**
- Remove transfer device and empty SWFI vial. They can be disposed of.
- Verify swirl the reconstituted Actilyse®. **DO NOT SHAKE.**
- If there are bubbles, let the solution stand undisturbed for a few minutes to allow them to disappear.
- Withdraw bolus dose using a 10 mL syringe and administer by hand, only once continuous infusion has been set up.
- Remove remaining dose using one or two 60 mL syringes depending on dose (see Dosing Table). Attach reusable connector to syringe #1.

ACTUAL BODY WEIGHT (kg)	TOTAL DOSE (mg)	BOLUS (mg)	Infusion (mg)	Spring #1 (mg)	Spring #2 (mg)
48	43.2	4.3	38.9	25	13.9
49	44.1	4.4	39.7	25	14.7
50	45.0	4.5	40.5	25	15.5
51	45.9	4.6	41.3	25	16.3
52	46.8	4.7	42.1	25	17.1
53	47.7	4.8	42.9	25	17.9
54	48.6	4.9	43.7	25	18.7
55	49.5	5.0	44.5	25	19.5
56	50.4	5.0	45.4	25	20.4
57	51.3	5.1	46.2	25	21.2
58	52.2	5.2	47.0	25	22.0
59	53.1	5.3	47.8	25	22.8
60	54.0	5.4	48.6	25	23.6
61	54.9	5.5	49.4	25	24.4
62	55.8	5.6	50.2	25	25.2
63	56.7	5.7	51.0	25	26.0
64	57.6	5.8	51.8	25	26.8
65	58.5	5.9	52.6	25	27.6
66	59.4	6.0	53.4	25	28.4
67	60.3	6.1	54.2	25	29.2
68	61.2	6.2	55.0	25	30.0
69	62.1	6.3	55.8	25	30.8
70	63.0	6.4	56.6	25	31.6
71	63.9	6.5	57.4	25	32.4
72	64.8	6.6	58.2	25	33.2
73	65.7	6.7	59.0	25	34.0
74	66.6	6.8	59.8	25	34.8
75	67.5	6.9	60.6	25	35.6
76	68.4	7.0	61.4	25	36.4
77	69.3	7.1	62.2	25	37.2
78	70.2	7.2	63.0	25	38.0
79	71.1	7.3	63.8	25	38.8
80	72.0	7.4	64.6	25	39.6
81	72.9	7.5	65.4	25	40.4
82	73.8	7.6	66.2	25	41.2
83	74.7	7.7	67.0	25	42.0
84	75.6	7.8	67.8	25	42.8
85	76.5	7.9	68.6	25	43.6
86	77.4	8.0	69.4	25	44.4
87	78.3	8.1	70.2	25	45.2
88	79.2	8.2	71.0	25	46.0
89	80.1	8.3	71.8	25	46.8
90	81.0	8.4	72.6	25	47.6
91	81.9	8.5	73.4	25	48.4
92	82.8	8.6	74.2	25	49.2
93	83.7	8.7	75.0	25	50.0
94	84.6	8.8	75.8	25	50.8
95	85.5	8.9	76.6	25	51.6
96	86.4	9.0	77.4	25	52.4
97	87.3	9.1	78.2	25	53.2
98	88.2	9.2	79.0	25	54.0
99	89.1	9.3	79.8	25	54.8
90	90.0	9.4	80.6	25	55.6

**PROGRAMMING INSTRUCTIONS**

**BELOW 100 KG**

- Select alteplase stroke [ $< 100$  kg] from drug library and choose concentration 1 mg/mL
- Enter Patient Weight (kg)
- Enter the VTBI of the syringe being used ONLY (the infusion time will default automatically)
- Independently review infusion parameters. Press Start Infusion

**100 KG & ABOVE**

- Select alteplase stroke [ $\geq 100$  kg] from drug library and choose concentration 1 mg/mL
- No changes necessary for drug amount/volume
- Independently review infusion parameters. Press Start Infusion

**SCAN FOR MIXING INSTRUCTIONS**

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## CAREGIVER GUIDE [POSTER]

A2 Size | Resuscitation Room & Imaging

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# MSOS Member Briefing


## September 2024

### ADDITIONAL LAYOUT

A4 Size | Used in the Alteplase Kit



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### WARFARIN EDUCATION VIDEO PREMIERE



مرحبًا! أنت تستعد لبدء رحلتك مع warfarin  
Hello! You're about to start taking warfarin

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### WARFARIN EDUCATION GUIDE

**10 tips to use warfarin safely and effectively**

- INR tests ensure you are taking the correct dose. Initially, check it 1-2 times a week, then every month, and remember always to attend your appointments.
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**10 نصائح لاستخدام الوارفارين بأمان وفعالية**

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# Thank You

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clevelandclinicabudhabi.ae



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## ISMP Update

### MSOS Briefing September 2024

**Rita K. Jew, PharmD, MBA, BCPPS, FASHP**  
President  
Institute for Safe Medication Practices

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# MSOS Member Briefing

## September 2024

### Congratulations on their Retirement!!



Susan Paparella, MSN, RN  
Vice President, ISMP Services



Michelle Mandrack, MSN, RN  
Director, Consulting Services



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### Welcome: Jana O'Hara, MSN, RN, CPHQ, CPPS

We are pleased to announce that **Jana O'Hara, MSN, RN, CPHQ, CPPS** has joined ISMP as the Director of Consulting and Education. Jana has worked in a variety of clinical quality, safety, and leadership roles. Most recently, she served as the Director of Marketplace Operations for a healthcare staffing company, leading clinical and non-clinical teams that support clinical staff across the country. Prior to that she served as the Director of Patient Safety for University Health in San Antonio, TX, overseeing patient safety across the entire healthcare system including inpatient, ambulatory, ambulatory surgery centers, dialysis, and correctional facilities. Please join us in welcoming Jana!



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### World Patient Safety Day



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### World Patient Safety Day



(left to right) Marcus Schabacker, Shannon Davila, Bevin O'Neill, Stuart Morris-Hipkins, and Dheerendra Kommala at the Whitehouse for the leadership briefing featuring heads of several government agencies sharing their safety initiatives underway.



(left to right) Andy Poole, Rita Jew, and Lea Rubini at the march for patient safety and remembrance ceremony for patients who lost their lives due to medical error.



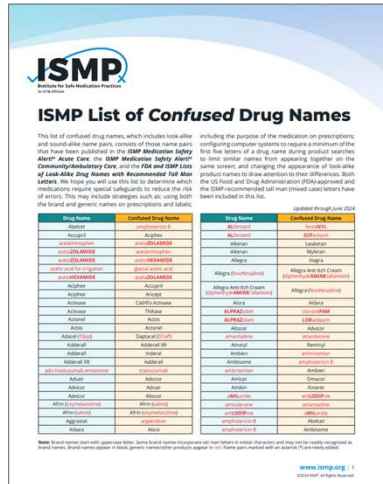
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# MSOS Member Briefing

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### Updated List of Confused Drug Names



- Updated August, 2024
- <https://home.ecri.org/blogs/ism-p-resources/list-of-confused-drug-names>



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### Just Culture Scholarship

<https://home.ecri.org/pages/judy-smetzer-just-culture-champion-scholarships>

- Applications Due Saturday, September 28<sup>th</sup>
- 3 full & 6 partial scholarships
- Scholarship Recipients Receive
  - A seat in the Just Culture Certification Course
  - A 1-year license to the Just Culture Conduct Course
  - A 30-day license to the Just Culture Assessment tool
  - The Just Culture Algorithm
  - A copy of Dave's Subs
  - Access to The Just Culture Company Portal
  - Eligibility to sit for the Just Culture Certification Exam, leading to certification as a Just Culture Champion



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### 27<sup>th</sup> Annual Cheers Awards

- Celebrate the amazing accomplishments of individuals & organizations who have advanced medication safety!
- December 10, 2024
- Civic Theatre
  - 510 O'Keefe Ave, New Orleans, LA



<https://home.ecri.org/pages/cheers-awards>



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### Whitepaper published by MSB

<https://www.medsafetyboard.com/med-safety-board-releases-white-paper-emphasizing-that-injectable-medication-labels-must-be-well-differentiated-to-prevent-patient-harm/>

- White Paper recently published by Med Safety Board, subsidiary of ISMP
- Call to action for pharmaceutical manufacturers to help prevent potentially harmful errors by ensuring injectable medication labels are easily distinguishable from each other
- The White Paper addresses key points that manufacturers should consider when designing labels
- Healthcare facilities can utilize key points when selecting/purchasing pharmaceuticals



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## September 2024

### Upcoming Educational Programs

<https://home.ecri.org/blogs/ismmp-events-and-webinars>

- Medication Safety Intensive Workshops (Virtual)
  - October 3 & 4
  - December 5 & 6
- Breakfast Symposium at the CSHP Seminar 2024: Applying Best Practices for Injection Safety: A “How To” Roadmap
  - Saturday, November 2, 2024
  - 7:45 am - 8:45 am
  - Palm Springs Convention Center
  - Room: Chino AB



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### Questions?



- A copy of today's slides will be posted on our website.
- Next MSOS Briefing date – **November 21<sup>st</sup>, 2024.**



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