HOUSTON Methodist LEADING MEDICINE

HOUSTON METHODIST
PHARMACY & THERAPEUTICS NEWS
April 2023

FORMULARY UPDATES

Laura M. Blackburn, PharmD

The following medications were **ADDED** to Formulary:

Medication	Pharmacologic Class and Indication	Formulary Action and Considerations
Droperidol inj	• First generation (typical) antipsychotic • Label: postoperative nausea/vomiting • Off-label: acute undifferentiated agitation	• Ordering available through order panel to allow for implementation of indication-specific dosing guidance • Medication use evaluation to be conducted within 6-12 months to assess use and safety
Mifepristone (Mifeprex®)	• Antiprogestin abortifacient, cortisol receptor blocker • Label: termination of intrauterine pregnancy	• System Policy "System_PCPS004 Pregnancy Terminations/ Abortions" outlines situations in which an abortion may or may not be performed, induced, or attempted by a physician at Houston Methodist in accordance with Texas law • Addition of mifepristone to system formulary assures medications are available for use in life-threatening situations in which abortion is necessary to preserve a mother's life • Restricted to ordering via order set by OB/Gyn and ED physicians for use in the emergency department and inpatient women's health areas only for FDA-approved indications

Thrombolytic Conversion for

Acute Ischemic Stroke:

Alteplase to Tenecteplase

Go-live Tuesday, May 16, 2023

Medication Policy Review

System_RXP&T_112 Implementation Strategies of Formulary Medication Restrictions

- To promote safe and cost-effective medication prescribing, a medication's approval to HM formulary may include guided-use strategies in an effort to proactively improve therapeutic outcomes, prevent adverse events, and facilitate formulary management initiatives
- Triennial review of the policy resulted in the following changes:
  - Updated title to "Implementation Strategies of Formulary Medication Restrictions"
  - Revised verbiage to reflect current subcommittee structure and Epic functionality
  - Revised table outlining strategies to promote safe and cost-effective use of formulary medications

System_RXMEDTI_156 Therapeutic Interchange Melatonin to Ramelteon

- Per System_PCPS198 Herbal and Alternative Therapies, the Department of Pharmacy Services will not purchase, procure, or dispense non-FDA approved medications, such as melatonin.
- While the HM medication use evaluation of ramelteon noted overprescribing for inpatients under 65 years old, there are no changes to the interchange policy. Providers are encouraged to assess the need for ramelton orders and not prescribe until necessary.

The *Pharmacy & Therapeutics News* is dedicated to providing the most current information regarding medication-use policy and formulary issues. Each issue details recently approved actions from the system P&T committee as well as relevant patient safety, pharmacotherapy and drug distribution updates. Entity representatives to the system P&T committee structure can be found here.

MEDSAFETY MATTERS!

Amaris Fuentes, PharmD

ISMP Medication Safety Newsletter Links: Acute Care & NurseERR & Community/Ambulatory

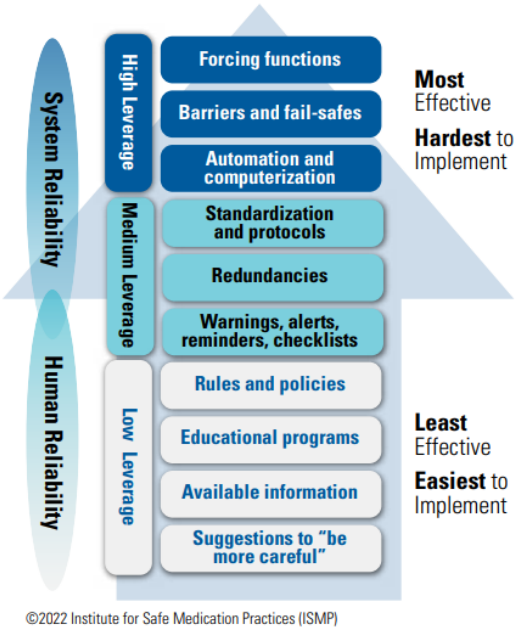
Overreliance on Holding Practitioners Accountable for the Five Rights

ISMP highlighted top medication errors and hazards reflected in ECRI's Top 10 Patient Safety Concerns for 2023. Three medication safety items are noted and will be the focus of MedSafety Matters! in the coming months. The first hazard noted is an "Overreliance on Holding Practioners Accountable for the Five Rights"

"The Five Rights" are frequently stated as expectations to achieve safe medication delivery. However, as ISMP notes, that reflects the desired outcome instead of the process for achieving it. Safe medication delivery requires that system problems be addressed using effective strategies as outlined in the graphic to the right. Examples include:

- standardization of medication protocols such as standardized heparin dosing and monitoring
- redundancies and reminders such as limited, but strategic use of independent double checks
- barriers and fail-safes such as limiting medications available for override by care area

In reviewing medication safety errors or when establishing or reviewing medication processes, ensure that active and latent failures are addressed and implement strategies to support the possibility of human error.



MEDICATION SAFETY & POLICY

Amaris Fuentes, PharmD, Alex Rogers, PharmD (Clinical Specialist Solid Organ Transplant)

Assessment of Agents for Vasoplegia Management

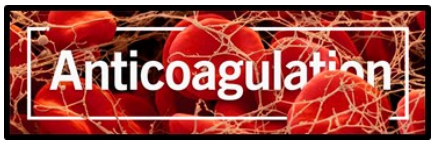
An evaluation was completed on use of hydroxocobalamin and methylene blue for distributive shock. Overall, there was higher MAP and SVR increase with hydroxocobalamin use compared to methylene blue for both septic and vasoplegic shock with minimal effect on vasoactive agent use. No safety concerns were noted between agents. Updates will be made to methylene blue and hydroxocobalamin orders to ensure there is appropriate monitoring and provide appropriate instructions for immediate use.

Peripheral Administration of Antithymocyte Globulin (rATG) Process Reviewed

Alex Rogers, PharmD — Clinical Specialist Solid Organ Transplant

An evaluation was complete on the use of *peripherally* administered rATG . Overall, peripherally administered rATG in selected patients showed minimal adverse events, infusion site reactions (3%), and upper extremity DVTs (1.4%). The peripheral administration technique prevented central line placement in 70% of patients. Use of peripheral rATG was deemed appropriate for continued use with planned expansion for administration in the outpatient setting.

ANTICOAGULATION USE SAFETY



Michael Sirimaturos, PharmD

Alteplase for Massive Pulmonary Embolism Order Set

Alteplase for the management of massive Pulmonary embolism (PE) has been associated with dosing errors. A CQI assessment of 35 patients at Houston Methodist showed opportunities for improved patient dosing and monitoring. To promote safe use, an epic order set will be developed with the following dosing options.

- Impending cardiac arrest: 20 mg IVP X1; then 80 mg over 2 hrs
- Cardiac arrest (unlabeled indication): 50 mg IVP over 2 mins X1, may repeat 50 mg in 15 mins

Radio buttons will offer the following options to guide documentation of the indication and assessment:

- Echocardiography confirmation of RV dilation
- CT pulmonary angiography confirmation of a clot

ANTIMICROBIAL STEWARDSHIP

Shivani Patel, PharmD

Impact of Clinical Decision Support on MRSA PCR Testing

Punit Shah, PharmD (Infectious Diseases Clinical Pharmacy Specialist)

MRSA PCR (polymerase chain reaction) testing is a molecular diagnostic technique used to detect the presence of the mecA gene, which is responsible for methicillin resistance. MRSA PCR results have a high negative predictive value (NPV) for clinical MRSA infections[1] and negative results can be used to safely and effectively de-escalate anti-MRSA therapy in patients with pneumonia and sepsis in patients at HMH.

In May 2021, an automatic ordering policy of MRSA PCR nares test was implemented at HM for the indications of respiratory tract infection and sepsis. While use of the testing increased, so did oversampling prompting the following diagnostic stewardship interventions in May 2022:

- Hard stop on MRSA PCR orders if placed within 24 hours of a previous order
- Clinical guidance for orders placed >24 hours but <7 days of previous order
- Clinical guidance for orders placed within 7-14 days of previous result

Table 1. Predictive Value of MRSA PCR Nasal Screening Assay by Time to Respiratory Culture Collection, Unit Type, and Culture Method

Variable	NPV (95% CI), %	PPV (95% CI), %	Specificity (95% CI), %	Sensitivity (95% CI), %
Time from MRSA nasal swab assay collection to respiratory culture collection				
≤24 hours (*n* = 316)	93.8 (90.1-96.4)	74.1 (60.9-84.7)	94.2 (90.6-96.7)	72.9 (59.7-83.6)
25 to 48 hours (*n* = 80)	98.6 (92.7-100.0)	66.7 (22.3-95.7)	97.3 (90.7-99.7)	80.0 (28.4-99.5)
49 hours to 7 days (*n* = 190)	95.7 (91.4-98.3)	59.3 (38.8-77.6)	93.4 (88.5-96.7)	69.6 (47.1-86.8)
8 to 14 days (*n* = 99)	92.9 (85.1-97.3)	53.3 (26.6-78.7)	91.8 (83.8-96.6)	57.1 (28.9-82.3)
>14 days (*n* = 51)	95.5 (84.5-99.4)	71.4 (29.0-96.3)	91.8 (83.8-96.6)	57.1 (28.9-82.3)
Overall (*n* = 736)	94.9 (92.8-96.5)	67.3 (57.8-75.8)	94.1 (92.0-95.8)	70.4 (60.8-78.8)
Unit type				
ED (*n* = 7)	80.0 (28.4-99.5)	100 (15.8-100)	100 (39.8-100)	66.7 (9.4-99.2)
ICU (*n* = 629)	94.9 (92.7-96.6)	66.7 (56.3-76.0)	94.1 (91.7-95.9)	70.3 (59.8-79.5)
Medical/surgical (*n* = 100)	95.3 (88.4-98.7)	66.7 (38.4-88.2)	94.2 (87.0-98.1)	71.4 (41.9-91.6)
Culture type				
Invasive culture (*n* = 191)	96.8 (92.7-99.0)	68.6 (50.7-83.1)	93.2 (88.2-96.6)	82.8 (64.2-94.2)
Noninvasive culture (*n* = 545)	94.2 (91.7-96.2)	66.7 (55.1-76.9)	94.4 (91.9-96.3)	65.8 (54.3-76.1)

Abbreviations: CI, confidence interval; ED, emergency department; ICU, intensive care unit; MRSA, methicillin-resistant *Staphylococcus aureus*; NPV, negative predictive value; PCR, polymerase chain reaction; PPV, positive predictive value.

Implementation of the diagnostic testing stewardship rules decreased duplicate MRSA PCR tests from 7.4% (370/7861) to 1.2% (120/9833) [CI 95% 0.035 (0.03-0.04), p-value <0.001].

Based on these findings and clinical literature supporting the accuracy of MRSA PCR results for up to 14 days following collection, HM will continue to discourage repeat MRASA PCR testing within a 14 day period.

1. Turner SC et al. *Am J Health Syst Pharm*. 2021;78(Supplement_2):S57-S61.

NEWSLETTER STAFF

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