HOUSTON Methodist LEADING MEDICINE

HOUSTON METHODIST
PHARMACY & THERAPEUTICS NEWS
October 2022

FORMULARY UPDATES

Laura M. Blackburn, PharmD

The following medications were **added** to Houston Methodist formulary

Medication	Pharmacologic Class and Indication	Comments and Considerations
Skyrizi® (risankizumab -rzaa)	• Humanized immunoglobulin GI monoclonal antibody that selectively inhibits IL-23 • Indicated for psoriatic arthritis, moderate to severe plaque psoriasis, or severely active Crohn's disease	• Restricted to outpatient use for FDA labeled indications • Prior financial approval
Susvimo® (ranibizumab)	• Anti-VEGF monoclonal antibody fragment • Indicated for the treatment of patients with Neovascular (wet) Age-related Macular Degeneration (nAMD) who have previously responded to at least two intravitreal injections of a Vascular Endothelial Growth Factor (VEGF) inhibitor medication	• Restricted to ophthalmology for FDA labelling for outpatient use only with prior financial approval • Voluntary recall due to design defects; availability in the future to be determined

Therapeutic Interchange Reviews

- Multivitamins: Formulary items include a multivitamin, multivitamin with minerals, Folbic® and Folbee Plus® Multivitamin Renal B Complex, Prenatabs RX® Prenatal vitamins with folic acid, MVW® multivitamin softgels
- HMG CoA Reductase Inhibitors: Atorvastatin, rosuvastatin, & pravastatin remain formulary

To request a medication for formulary review, **click here**

ANTIMICROBIAL STEWARDSHIP:

2022-2023 Influenza Season

The Houston area continues to see the number of influenza cases increase with positive tests approaching those seen in 2017.

Follow the trends at Houston Methodist Respiratory Pathogen Tracker.

Hospitalized patients are assessed and vaccinated per-policy according to our standing orders for treatment.

Antibiotic Stewardship Program updates continue on page 4

Have a medication-related, cost-saving idea? **Submit your idea here**

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.

MEDICATION POLICY

Monoclonal Antibody Dose Rounding:

The triennial review of the monoclonal antibody dose rounding policy was complted. No significant changes were made. The policy allows Houston Methodist to decrease waste, improve workflow & ensure timely therapy. Doses will continue to be rounded to the nearest available vial size when the change is less than or equal to 10% of the calculated dose.

PHARMACOECONOMIC UPDATES

Respiratory Therapy Interchange Updates

The therapeutic interchange policies approved in 2017 allowing the substitution of canister devices for nebulization therapies were temporarily suspended during the Covid pandemic. After review by HM respiratory therapy and infection control divisions, the automatic interchanges will be reinstated as this dispensing strategy is the most cost-effective. Interchanges align dispensing quantities with patients' expected length of stay and avoids waste.

As a patient's respiratory therapy needs change across their stay, providers are encouraged to review the need for respiratory therapies on a daily basis and discontinue unnecessary treatments timely.

MEDSAFETY MATTERS!

Amaris Fuentes, PharmD

ISMP Medication Safety Newsletter Links: *Acute Care* & *NurseERR*

With an increase in vaccine administration for influenza season, a recent ISMP newsletter provides a summary of non-COVID-19 vaccines errors reported to ISMP's National Vaccine Errors Reporting Program. The top errors reported included wrong and expired vaccine, wrong age, and extra and wrong dose errors. Most errors were reported in variety of outpatient settings, but inpatient errors still occur.

Safe practice recommendations are outlined in the newsletter and include: maximizing technology for ordering and clinical decision support, and barcode administration; purchasing and storage practices to minimize look-alike, sound-alike risks; verbal confirmation and engagement with the patient ensure appropriate patient information and records prior to vaccine administration; proper vaccine labeling and documentation; and proper education for practioners on vaccine products and practices. The following tool was provided by ISMP to support staff education for vaccine error prevention: Staff Educational Topics and Teaching Points to Prevent Errors During Vaccine Administration.

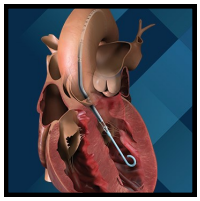
MEDICATION ORDERING SAFETY ENHACEMENTS

Amaris Fuentes, PharmD

Outpatient Oncology Electrolyte Replacement Protocol

Clinically significant electrolyte abnormalities are common in oncology patients and are associated with poor health outcomes (Garces A, et al). Houston Methodist completed a quality improvement review of our outpatient, oncology electrolyte replacement protocol. While the protocol was deemed effective and safe, opportunities were found to improve ordering of the electrolyte replacements. Updates to therapy plan structure were approved that modify the layout, to allow single-select options, and provide information on serum creatinine thresholds at the point of ordering. The protocol will be formally re-assessed in 3 years

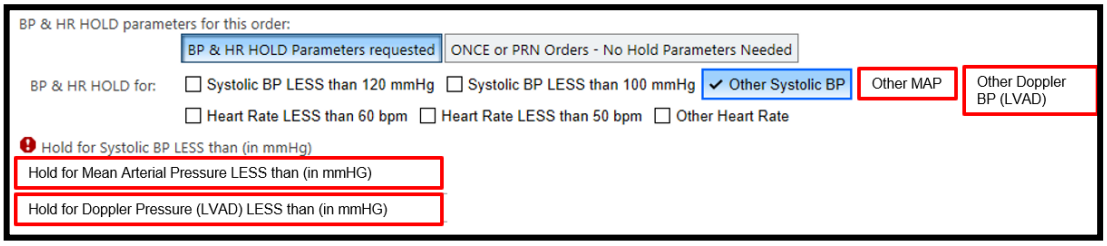
Impella® Heparin Protocol Updates



The Impella® heparin protocol was updated to follow recent FDA approvals to purge solution delivery. Dextrose 20% solutions for purge delivery will be removed from the protocol and order set. Additionally, heparin -free purge solutions will be updated to include sodium bicarbonate solutions for patients that are heparin intolerant or have a heparin contraindication. Dextrose 5% solutions will remain available. Consult with pharmacy services for further details on patient management.

Blood Pressure Hold Parameters—Left Ventricular Assist Device Related Updates

Blood pressure medication hold parameters will be updated to reflect additional hold parameters that include mean arterial pressure (MAP) and Doppler-based measurements. The parameters support monitoring needed for left ventricular assist device patients and may be used for other patients as needed.



NEWSLETTER STAFF
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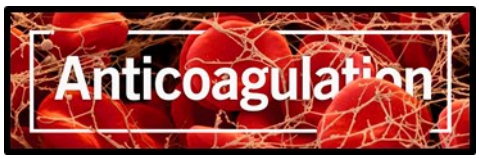
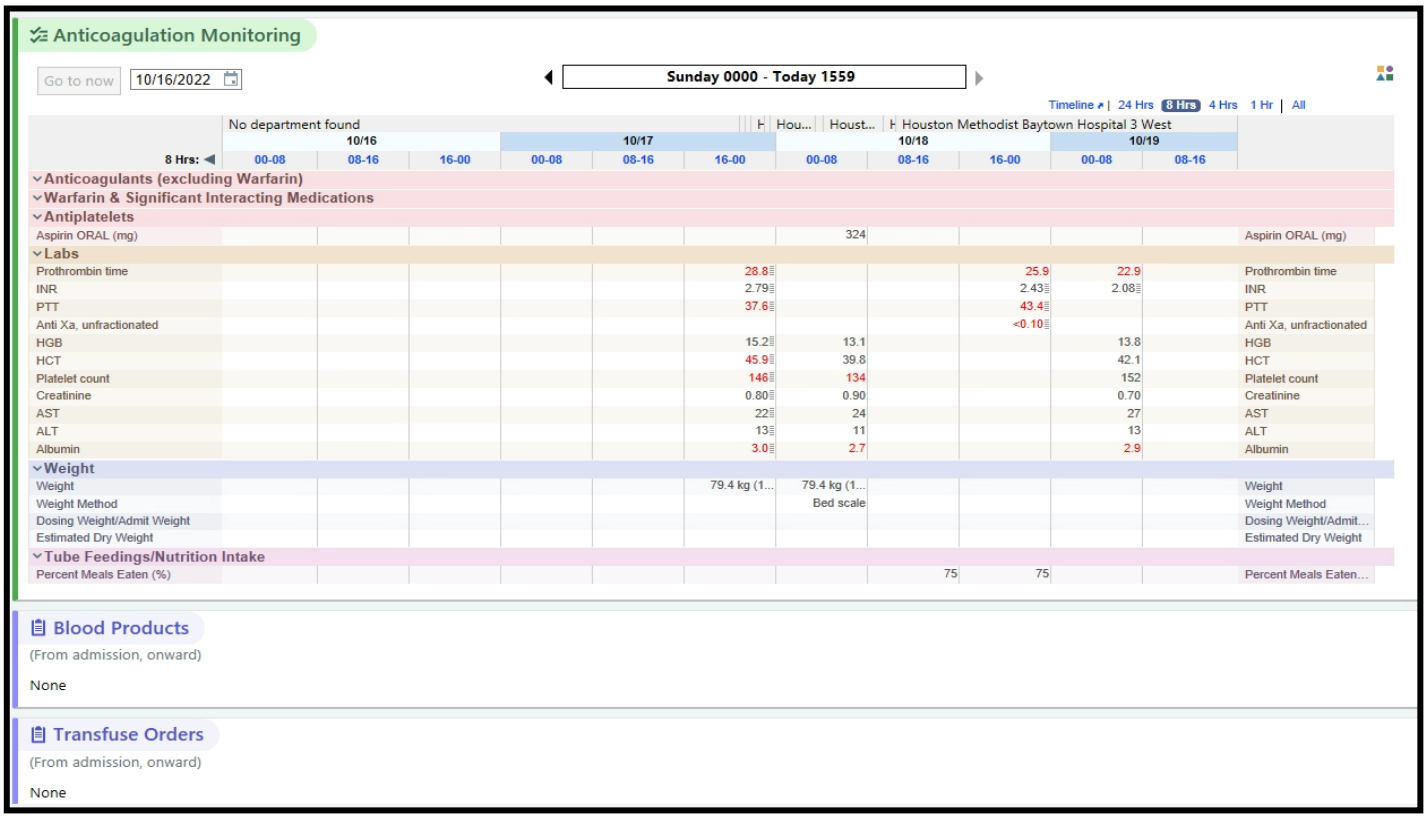
ANTICOAGULATION USE SAFETY



Patti Romeril, PharmD

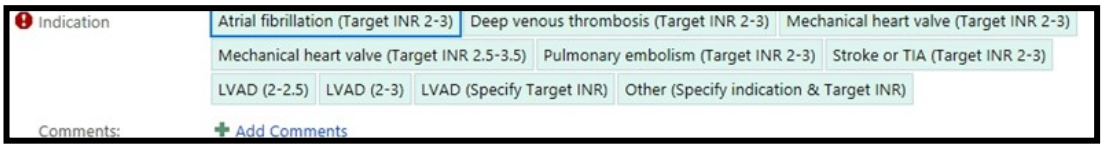
Anticoagulation Monitoring Tab

An Anticoagulation Monitoring tab is now available for providers in Epic by searching under the Summary tab for "Anticoag Monitoring". The tab will display chronological information regarding anticoagulant and antiplatelet medications that are administered, relevant lab values, and patient specific information, such as weight, nutrition intake, and blood transfusions. An example of information is displayed in the figure below.



Updated Warfarin LVAD Goals

The Epic orderable for the pharmacy consult to manage warfarin has been updated to include two additional radial buttons: LVAD (2-2.5) and LVAD (2-3). The previous version of the orderable only had one radial button for the LVAD indication, and the INR was entered by free-text. An example of the new radial button options are below:



Anticoagulation Prescribing Resources:

Houston Methodist specific resources for anticoagulation management can be found on our Drug Information Center website. Click on the options below to be re-directed to the resource.

Anticoagulation Patient Education | Anticoagulation Transition Guide | Perioperative Anticoagulation Guide | Anticoagulation Reversal Order Set

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ANTIMICROBIAL STEWARDSHIP

Shivani Patel, PharmD

Surgical Antibiotic Prophylaxis Updates

Infections occurring at, or near a surgical incision within 30 days of procedure or within 90 days of prosthesis implantation are one of the most common types of nosocomial infections and are associated with often severe complications. Antibiotic prophylaxis is needed for contaminated and clean-contaminated surgeries and for surgeries involving insertion of devices and selection is based on evidence-based guidelines, current literature, and local susceptibility patterns. Optimal antibiotic selection, dosing, timing, and redosing lower surgical site infection (SSI) rates. Antibiotic prophylaxis in addition to blood glucose control, proper skin preparation, and normothermia are key to reducing infection risk. However, broad spectrum antibiotic use or prolonged durations lead to increased resistance, medication toxicity, and opportunistic infections.

A 2019 JAMA Surgery paper evaluated 79,058 patients undergoing cardiac, orthopedic, colorectal, or vascular procedures within the VA system and showed that non-beta lactam based regimens were associated with higher rates of SSI, acute kidney injury, and C. difficile. Importantly, the presence of a reported penicillin allergy resulted in a higher probability of patients receiving non-beta lactam regimens increasing the risk for developing SSIs.

Type of Surgery	Surgical Group	Recommended Prophylaxis	Alternative Prophylaxis Serious Penicillin[1] OR Cephalosporin Allergy
Cardiac Surgery	CABG (Chest and Donor Site and Chest Only), Cardiac Surgery, Heart Transplant, Pacemaker Surgery	Cefazolin +/- Vancomycin if MRSA risk[2]	Vancomycin
Gastrointestinal Surgery	Bile Duct/Liver/Pancreatic Surgery, Gallbladder Surgery, Bariatric (Roux-en-Y)/Gastric Surgery, Abdominal Surgery, Small Bowel Surgery, Spleen Surgery, Liver Transplant	Cefoxitin OR Cefazolin	Gentamicin
Gastrointestinal Surgery	Appendix Surgery	Cefoxitin OR Cefazolin + Metronidazole	Gentamicin + Metronidazole
Colorectal Surgery	Colon Surgery, Rectal Surgery	Cefoxitin OR Cefazolin + Metronidazole **PLUS** Pre-op Bowel Prep[3]	Gentamicin + Metronidazole **PLUS** Pre-op Bowel Prep[3]
Genitourinary Surgery	Kidney Surgery, Kidney Transplant, Prostate Surgery	Cefazolin	Gentamicin
Genitourinary Surgery	Penile Prosthesis or Implanted Prosthetic Material	Cefazolin + Gentamicin	Gentamicin + Vancomycin
Gynecologic & Obstetric Surgery	Abdominal Hysterectomy, Vaginal Hysterectomy, Pubovaginal sling	Cefazolin[4]	Gentamicin + Clindamycin
Gynecologic & Obstetric Surgery	Cesarean Section	Cefazolin + Azithromycin[5]	Gentamicin + Clindamycin + Azithromycin
Oral Head and Neck Surgery	Neck Surgery, Thyroid and/or Parathyroid Surgery	Cefazolin + Metronidazole	Clindamycin
Neurosurgery	Craniotomy, Laminectomy, Refusion of Spine, Spinal Fusion, Ventricular Shunt	Cefazolin +/- Vancomycin if MRSA risk[2]	Vancomycin
Orthopedic	Hip Prosthesis, Knee Prosthesis, Open Reduction of Fracture	Cefazolin +/- Vancomycin if MRSA risk[2]	Vancomycin
Non-Cardiac Thoracic & Skin and Soft Tissue Procedures	Thoracic Surgery, Breast Surgery (with implants), Herniorrhaphy (Ventral Hernia repair w/mesh)	Cefazolin +/- Vancomycin if MRSA risk[2]	Vancomycin
Vascular	Abdominal Aortic Aneurysm Repair, Limb Amputation, Peripheral Vascular Bypass Surgery, Shunt for Dialysis, Carotid Endarterectomy	Cefazolin +/- Vancomycin if MRSA risk[2]	Vancomycin
Plastic surgery	Clean with risk factors or clean-contaminated	Cefazolin	Vancomycin

To achieve optimal antibiotic concentrations at the time of cut and time of close, P&T approved recommendations for surgical prophylaxis based on the type of procedure performed, antibiogram susceptibility data, and microbiology data from HM SSI cases. Approving these recommendations are part of a series of planned interventions to optimize antibiotic prophylaxis that include improving drug administration timing, dosing, and penicillin allergy assessment.

Susceptible Dose Dependent Dosing Chart Update

Antimicrobial	Organism	Susceptible (S)		Susceptible Dose Dependent (SDD)	
		MIC (µg/mL)	Dose based on normal renal function	MIC (µg/mL)	Dose based on normal renal function
Daptomycin	*Enterococcus faecium*	N/A	N/A	< 4	8-12 mg/kg every 24 h
Piperacillin/ Tazobactam	Enterobacterales	≤ 8/4	3.375 g – 4.5 g every 6 h administered as a 30-minute infusion	16/4	4.5 g every 8 h extended infusion
Cefepime	Enterobacterales	< 2	1 g every 12 h	4 8	Urinary pathogens: 1 g every 8 h All Other Sources: 2 g every 8 hours extended infusion
Ceftaroline	*Staphylococcus aureus*	< 1	600 mg every 12 h	2 – 4	600 mg every 8 h
Fluconazole	*Candida glabrata*	N/A	N/A	< 32	> 6 mg/kg/day
	C. albicans	< 2	6 mg/kg/day	4	
	C. parapsilosis	< 2		4	
	C. tropicalis	< 2		4	

The Clinical and Laboratory Standards Institute (CLSI) antimicrobial and antifungal standards establish a susceptible-dose-dependent (SDD) category for certain bacterial species and treatment combinations.

According to the reporting of MICs under the SDD category, higher medication exposure is necessary for successful therapy. Breakpoints are based on adult pharmacokinetic, pharmacodynamic, and clinical outcome data.

The updates support stewardship goals by allowing providers to see the SDD designation in lieu of an "intermediate" listing, which increase tendencies to properly prescribe the antimicrobial over a less effective alternative agent.

Dosing guidance will also be provided in Epic.

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