

## FORMULARY UPDATES

Laura M. Blackburn, PharmD

The following medication was reviewed for formulary status

| Medication               | Formulary Updates                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ceftaroline Use Criteria | <p>Assessing the targeted infections most appropriate for ceftaroline use, the following modified criteria for usage were approved:</p> <p><b>Restricted to:</b></p> <ul style="list-style-type: none"> <li>Suspected or confirmed severe <i>Staphylococcus aureus</i> endovascular infections</li> <li>Salvage therapy for recurrent/persistent <i>Staphylococcus aureus</i> bacteremia</li> <li>Contraindication for use of other first-line agents due to allergies, documented adverse reactions (Vancomycin, Daptomycin, Linezolid) or documented resistance</li> </ul> <p>Additional prescribing support was approved to include a ceftaroline dosing chart added to the ERX side panel and the infusion duration be preselected to be 2 hours</p> |

To request a medication for formulary review, [click here](#)

## Policy Updates

Andy Bui, PharmD & Katherine Agarwal, MD

### Default Medication Administration Timing Updates to Promote Sleep

HM continues to modify practices that detract from patients attaining adequate sleep. Lack of sleep contributes to delirium and adverse outcomes. Over the past year as part of a comprehensive “Sleep Bundle” approach, the standard, default administration times for many medications were modified to avoid arbitrary administration during the hours of 10PM to 6AM or “Z time”.

After implementation, significant reductions in sleep interruptions were noted. However, continuous review and feedback from nursing identified an opportunity for further refinement that would balance the need for “on-time” administration of medications while also keeping the majority of medication administrations out of the “Z time”.

| Frequency         | Administration Time                |
|-------------------|------------------------------------|
| Daily             | 0830                               |
| Twice daily       | 0830, 2030                         |
| Three times daily | 0830, 1430, 2030                   |
| Four times daily  | 0600, 1100, 1600, 2030             |
| At bedtime        | 2030                               |
| Every 4 hours     | 0900, 1300, 1700, 2100, 0100, 0500 |
| Every 6 hours     | 0500, 1100, 1700, 2300             |
| Every 8 hours     | 0600, 1400, 2200                   |
| Every 12 hours    | 0830, 2030                         |
| Every 24 hours    | 0830                               |
| Every 48 hours    | 0830                               |

Revised, default times are reflected in the table.

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](#).

## Policy Updates

### Estrogen Vaginal Cream ([RXP&T 110](#))

An automatic therapeutic interchange was approved to substitute estradiol vaginal cream for branded Premarin vaginal cream.

### Cytotoxic Chemotherapy Dose Rounding Policy Updates ([RXP&T 111](#))

Minor updates included addition of the HMCY location, reference updates for more recent publications on dose rounding and a clarifying statement added to the policy regarding exclusion of oral antineoplastics and medications dosed by therapeutic drug monitoring (e.g. Busulfan)

### Auto verification of Heparin Flush Orders (System PCPS 212)

Heparin flush orders in the Oncology Treatment Plans and Oncology Therapy Plans will qualify for auto verification under HM policy.

### Alvimopan (Entereg) Safety Enhancement

Cumulative dose tracking is necessary for safety and REMS compliance. An Epic alert Nursing during administration of 7 day/15 dose threshold for total therapy will be added as an additional safeguard.



## CHEMOTHERAPY STEWARDSHIP COMMITTEE

Erika Brown, PharmD

### Treatment Plan Updates

Two new, and 24 modified oncology plans were reviewed and approved for build or updates by the committee. This work continues to underscore the constant maintenance required to assure safe entry of evidence-based, contemporary oncology treatment regimens in Epic.

### Rituximab Continuous Quality Improvement Review

The safety and process of care for ordering and administering rituximab formulations was reviewed. Assessment of rapid infusion administration infusion related reactions and perquisite screening of patients for hepatitis B and C were assessed among other quality parameters. The review confirmed a low incidence of infusion reactions and identified areas to improve practice such as adding prompts for review if Hepatitis B & C screening prior to initiation. The review found that more patients could be converted to rapid infusion. The review also noted that approximately half of patients may be candidates for subcutaneous injection formulation that would improve the treatment experience for many patients. Updates to pharmacy monitoring assessment checklists will be instituted to improve patient conversions and assure improve screening.

## MEDICATION PRESCRIBING AT TRANSITIONS OF CARE: EPIC ENHANCEMENT

Niaz Deyhim, PharmD, MS, BCPS

Patients discharging with specialized, compounded medication prescriptions have had difficulty obtaining appropriate product as the product may not be available to be filled by many outpatient pharmacies. This disrupts transitions of care for our patients.

To prevent this situation, outpatient prescriptions for products such as “Magic Mouthwash” (a combination of Benadryl, lidocaine, maalox and simethicone) will prompt an alert to providers to transition the product to a viable prescription convention or to a compounding pharmacy that would be able to fill the product. Prescribers can change to a different pharmacy, continue the order with justification and instructions, or cancel the order based on clinical needs. The alert balances patient safety, provider autonomy, and workflow efficiency to reduce preventable errors. Alerts have been added to medication records that have been most problematic for patients at discharge. A framework to add the alert to new medications was also approved so that this issue can be addressed proactively as new compounded product records are added to formulary.

ⓘ Review compounded medication that must be sent to a specialty/compounding pharmacy

- This medication requires special compounding.
- Retail pharmacies typically cannot fulfill this order.
- Please select a specialty/compounding pharmacy or change the routing accordingly.

ⓘ Acknowledge and continue

☐ Change Pharmacy

☐ Continue Anyway

☐ Will Cancel Order

DEXTROSE 40 % ORAL GEL - NEONATE

FINASTERIDE 1 MG/3 ML ORAL SUSPENSION

GI COCKTAIL (LIDOCAINE/MAALOX PLUS)

HYDROCORTISONE 2 MG/ML ORAL SUSP CMPD

LANSOPRAZOLE 3 MG/ML ORAL CMPD SUSPENSION

MAGIC MOUTHWASH (BENADRYL/LIDOCAINE/MAALOX+SIMETHICONE 1:1:1)

PANTOPRAZOLE 2 MG/ML ORAL CMPD SUSPENSION

PROPYLTHIOURACIL (PTU) 5 MG/ML ORAL SUSPENSION

S.M.O.G. (SALINE/MINERAL OIL/GLYCERIN) ENEMA

SODIUM CHLORIDE ORAL SOLUTION 2.5 MEQ/ML (NEO/PED)

DEXAMETHASONE 0.5 MG/ML ORAL SUSPENSION (NEO)

HYDROCHLOROTHIAZIDE 5 MG/ML ORAL SUSPENSION (NEO/PED)

HYDROXYCHLOROQUINE SULFATE 25 MG/ML ORAL SUSPENSION

OMEPRazole-SODIUM BICARB 2 MG/ML ORAL CPD SUSPENSION

URSODIOL 20 MG/ML (NEO/PED) ORAL SUSPENSION CMPD

CLONAZEPAM SUSPENSION 0.1 MG/ML

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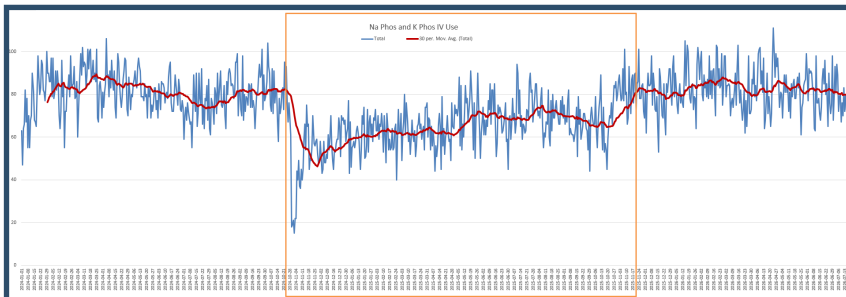
## Hypertonic Saline Use Safety Update

The use of 3% and 23.4% hypertonic saline (HTS) in stroke patients was conducted to determine alignment with literature and Houston Methodist policy. The report identified that updates to the Epic configuration within the order sets would improve safety. Also the inclusion of a buffered hypertonic solution for clinical situation where acidosis, hyperchloremia or presence of an anion gap of > 15 are present. Addition of a 3% HTS Bolus option in the ICP order set was approved as a means of increasing use of the ordering tool that has the proper safeguards and instructions.

## Pharmacoeconomics Update

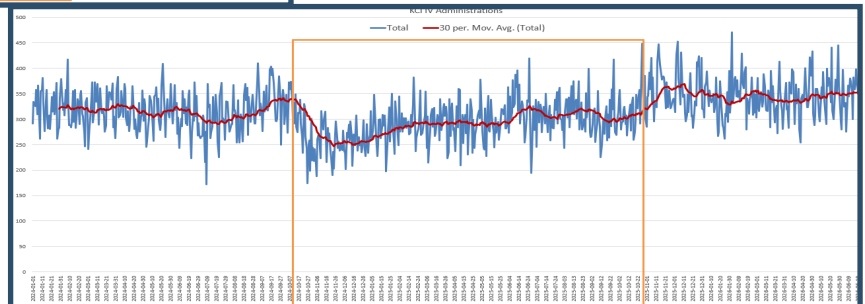
### IV Potassium and IV Phosphate Replacements Added to IV to PO Conversion Standing Orders by Pharmacists

Experience from previous medication shortages demonstrate how an oral formulation first strategy for electrolyte replacement can maintain quality care and reduce medical waste and costs. During the IV Fluid shortage of 2024, HM reduced the IV potassium and phosphate replacement use by nearly 40% by effectively utilizing oral replacements. The change not only allowed treatment at a lower cost (oral being less than IV product), there was also substantial reduction in plastics use and waste from the IV products.



To regain those benefits and sustain them, prompts and guidance in Epic will be added to promote selection of oral replacement options. P&T also approved the allowance for pharmacists to convert the route of administration for potassium and phosphate electrolyte replacement in qualified patients per standing medical order.

The configuration in Epic will promote the selection of oral options for physicians when prescribing and for nurses when selecting the product formulation to use when replacing electrolytes as directed in the electrolyte replacement protocol. Epic prompts were effective during the fluid shortage and are regular reminders of economically responsible treatment practices.



The prompts in Epic are shown below for reference.

**Alternative Recommended**

You selected:  
potassium chloride in water IVPB 10 mEq: 10 mEq, intravenous, at 100 mL/hr, once, today at 1631, 1 dose Rate of administration should be adjusted according to patient tolerance.

**Details**  
Oral/Enteral potassium is preferred to intravenous (IV) when clinically available. Select alternative oral/enteral replacement unless emergent correction is needed or patient cannot tolerate oral/enteral route.

**Alternatives**

| Alternative                                                   | Details |
|---------------------------------------------------------------|---------|
| <input type="radio"/> potassium chloride (MICRO-K) CR capsule | oral    |
| <input type="radio"/> potassium chloride (KLOR-CON) packet    | oral    |

**Continue with:**  
☐ potassium chloride in water IVPB 10 mEq: 10 mEq, intravenous, at 100 mL/hr, once, today at 1631, 1 dose

**Alternative Recommended**

You selected:  
sodium phosphate in sodium chloride 0.9% 250 mL IVPB: intravenous, at 31.3 mL/hr, Administer over 8 Hours, once, today at 1632, 1 dose

**Details**  
Oral/Enteral phosphate is preferred to intravenous (IV) when clinically available. Select alternative oral/enteral replacement unless emergent correction is needed or patient cannot tolerate oral/enteral route.

| Conversion                                                                                               | Dosing Instructions   |
|----------------------------------------------------------------------------------------------------------|-----------------------|
| With concurrent HYPOkalemia or<br>Hemodialysis (K < 3.5 or K 3.5 - 5<br>mEq/L)                           | IV NaPhos or<br>KPhos |
| Phospha 250 Neutral (P250N) tablet<br>contains:                                                          | Phos PO Conversion    |
| • Phosphorus 8 mEq (250 mg)                                                                              | 10 mEq                |
| • Sodium 1.3 mEq (298 mg)                                                                                | 15 mEq                |
| • Potassium 1.1 mEq (45 mg)                                                                              | 20 mEq                |
| Conversion from IV PO Phosphorus is<br>1:1.5-1.6 to account for erratic<br>absorption of PO formulation. | 20 mEq                |

**Alternatives**

| Alternative                         | Details                                                           |
|-------------------------------------|-------------------------------------------------------------------|
| <input type="radio"/> KPhos 10 mmol | sod phos di, mono-K phos mono (PHOSPHA 250 NEUTRAL) 250 mg per... |

## ANTIMICROBIAL STEWARDSHIP

Shivani Patel, PharmD

### Minocycline Medication Use Evaluation

Antibiotic stewardship assessment of intravenous minocycline's clinical effectiveness and pharmacoeconomic value were reviewed. In terms of effectiveness, intravenous eravacycline has comparable in vitro activity. A comprehensive assessment of efficacy, safety and costs were reviewed and determined that IV minocycline should be replaced with IV eravacycline when oral minocycline therapy is unable to be administered. Using minocycline's susceptibility to serve as a surrogate to guide eravacycline use, the data suggests similar or better activity for eravacycline. The availability of the oral formulation of minocycline will remain on formulary and readily available.



### **Rifaximin Therapy to be Held During Concurrent Broad Spectrum Antibiotic Therapy Treatment**

Rifaximin is proposed to have its benefit by reducing the bacteria in the intestinal tract that produce ammonia. Several, peer-reviewed studies have established that concurrent administration of broad spectrum antibiotics used for other infectious indications along with rifaximin negated the benefit of rifaximin. Assessing this data, the System Antibiotic Stewardship Committee and P&T approved a policy to reduce this duplication of therapy. ([RXCLIN 112—Pharmacy Procedure for Withholding Rifaximin Therapy Per Standing Medical Order](#))

The protocol directs the holding of rifaximin administration while patients are concurrently administered broad-spectrum antibiotics and are intubated. If the patient meets criteria to suspend the rifaximin administrations, the pharmacist will place the rifaximin order "on hold" per-policy and document the reason for holding as, "Therapy on hold while receiving broad spectrum antibiotics." The pharmacist will resume rifaximin therapy orders "per policy" once "broad-spectrum antibiotic" criteria are no longer met or the patient is extubated.

An assessment of the impact will be conducted after 6-12 months and if there are no clinical complications identified, expansion of the protocol to non-intubated patients concurrently receiving broad spectrum antibiotics will be assessed which is consistent with published literature reports inclusion criteria.

While exact savings are difficult to quantify due to variability in patient eligibility, rifaximin represents a significant system-wide expense (~\$2.5 million total spend annually). Given the lack of evidence supporting its benefit in treatment (as opposed to prophylaxis) when overlapping with broad-spectrum antibiotics, leaders noted that this initiative could yield substantial cost reduction opportunities.

### References:

- Ward JA, et.al. Evaluation of a protocol for rifaximin discontinuation in critically ill patients with liver disease receiving broad-spectrum antibiotic therapy. World J Hepatol. 2023.
- Kulkarni AV, et al. Antibiotics With or Without Rifaximin for Acute Hepatic Encephalopathy in Critically Ill Patients With Cirrhosis: A Double-Blind, Randomized Controlled (ARiE) Trial. Am J Gastroenterol. 2024.

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