

## Critical Drug Shortages

On-going shortages and strategies to minimize the impact to patient care for drugs with limited availability

**NOTE:** *Morphine PCA discontinued by manufacturer*  
**Action:** *remove from powerplans; use hydromorphone PCA*

**Shortage:** *Heparin*  
**Action:** *oral or injectable alternatives*

**Shortage:** *Lidocaine, Bupivacaine injection with and without epinephrine*  
**Action:** *alternative concentrations, sizes*

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If you have any questions or concerns, please contact the NMH Pharmacy Purchasing Department: 402-354-4337.

## Anticoagulation Monitoring Guidelines – NMH

A recently approved motion at Medical Executive Committee will allow for a baseline hemogram to be ordered in Cerner anytime a direct-acting oral anticoagulant (DOAC) is ordered for hospitalized patients. The rule will be designed to cancel out the hemogram order if the patient has either an active order for a current hemogram or CBC, or if a hemogram or CBC has been resulted out within the past 3 days.

Below is a comprehensive list of rule based hemogram monitoring parameters for anticoagulants:

Drug	Rule Based Hemogram Monitoring
Enoxaparin treatment dose	Baseline hemogram, then q3d starting next day x14 days
Enoxaparin prophylaxis dose	Baseline hemogram, then q3d x14 days
SC heparin	Baseline hemogram, then q2d x14 days
DOACs (dabigatran, apixaban, rivaroxaban)	Baseline hemogram

## MDI Therapy in Mechanically Ventilated Patients

The NMH Medical Executive Committee has approved an automatic dosing adjustment for MDIs in patients with advanced airways. It is community and industry standard with advanced airways (i.e. trach or ETT) to double the dose of all ordered MDIs to ensure effective delivery to the lungs. The minimum is 4-8 puffs (or double the ordered dose). MDIs are preferred in COVID/PUI patients as delivering an aerosol medication generates aerosol droplets in the air that can spread this disease.

For patients with advanced airways and MDI orders, respiratory therapy will notify pharmacy of the advanced airway. Pharmacists will modify the order **to double the original order of MDI medication to be delivered** via advanced airway. If there is any questions regarding safety of the increased dosing, pharmacy will discuss with the prescriber prior to modification.

## Vitamin Conversion to Metric

Several common dietary supplements will be undergoing a change in labeling based on the FDA's 2016 "Food Labeling: Revision of the Nutrition and Supplement Facts Label" which mandates labeling compliance by January 2021. The guidelines modify how dietary ingredients are measured and displayed on package labeling. The rule requires the label to list the absolute amounts of vitamins and minerals in metric units in addition to the percent daily value (% DV). Supplements that will be modified include folate, niacin, and vitamins A, D, and E. The new units include:

- **Vitamin A: IU to mcg RAE** (retinol activity equivalent): 1mcg RAE = 3.3 IU beta-carotene (supplement)
- **Vitamin D: IU to mcg:** 1mcg = 40 IU
- **Vitamin E: IU to mg alpha –tocopherol:** 1mg alpha-tocopherol = 1.49 IU d-alpha-tocopherol (natural)
- **Folate/folic acid: mcg to mcg DFE** (dietary folate equivalents): 1mcg DFE = 1mcg folic acid (food) or 0.6mcg folic acid (supplement)
- **Niacin: mg to mg NE** (niacin equivalents): 1mg NE = 1mg niacin

Some manufacturers are keeping the prior units on the packaging to assist in the transition, while others are not.

The chart below depicts some of the common vitamin dosages and their new unit conversion:

Product Units (previous unit)
vitamin A 3,000 mcg RAE (10,000 intl units)
vitamin D (ergocalciferol) 1,250 mcg (50,000 intl units)
vitamin D3 (cholecalciferol) 10 mcg (400 intl units)
vitamin D3 (cholecalciferol) 25 mcg (1,000 intl units)
vitamin D3 (cholecalciferol) 125 mcg (5,000 intl units)
vitamin D3 (cholecalciferol) 250 mcg (10,000 intl units)
vitamin E 67 mg (100 intl units)
vitamin E 134 mg (200 intl units)
vitamin E 268 mg (400 intl units)
vitamin E 670 mg (1,000 intl units)
folic acid 400mcg DFE (240mcg)

## Antimicrobial Stewardship – Double Antibiotic Coverage for Anaerobes

Antimicrobial stewardship programs are designed to ensure that patients receive appropriate antimicrobial treatment for the correct duration. Stewardship interventions have been proven to improve individual patient outcomes, reduce the overall burden of antibiotic resistance, and save healthcare dollars.

As an ongoing antimicrobial stewardship measure, patients are screened for duplicate anaerobic antibiotic coverage. Broad spectrum antibiotics such as **ampicillin/sulbactam piperacillin/tazobactam, ertapenem, and meropenem** provide coverage for Gram positive, Gram negative, and **anaerobic organisms**. Metronidazole primarily provides coverage for **anaerobic organisms**. It is not necessary to combine metronidazole with these antibiotics unless culture and sensitivity data would indicate inadequate coverage with single therapy alone. A notable exception is if intravenous metronidazole is being used for the treatment of *C.difficile*; a broad spectrum antibiotic may also be necessary for other infection(s) present.

Physicians will be notified by pharmacy of potential duplicate coverage by phone upon receipt of a new order or via Cerner Staff to Provider notification.

### Pharmacy and Therapeutics Update

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