Pharmacy & Therapeutics Committee Meeting

Zoom Conference

February 10, 2022 7:00 a.m.

Next Meeting Date: April 7, 2022 at 7:00 a.m.

PHARMACY AND THERAPEUTICS COMMITTEE

DATE: December 9, 2021 CALLED TO ORDER: 7:01 a.m.
LOCATION: Physician's Dining Room + conference call ADJOURNED: 7:34 a.m.

Physician Member Attendance:		Non-Physician Member Attendance:			Guests:
X	**Nathan Chamberlain, MD- Chairman**	X	**Karen Babb, PharmD- Manager**	Shannon Harris, RN- Infection Prevention	**Linda Johnson, PharmD**
X	**Mark Anderson, MD- Infectious Disease**		Jamie Barrie, PharmD- Manager, Hixson	Rhonda Hatfield, RN-CNO	**Natasha McGhee, RN**
X	**Justin Blinn, MD- Anesthesiology**	X	**Patrick Ellis, PharmD- Director**	Kevin Hopkins, RT- Director of Resp Therapy	**Tina Mathew, Pharmacy Resident**
	David Dodson, MD- Hospitalist		Rodney Elliott- Purchasing	X **Rachel Kile, PharmD- Clinical Manager**	**Doug Dertien, Pharmacy Resident**
	F. Lee Hamilton MD- Hospitalist	X	**Karen Frank, RN- Quality**	X **Daniel Marsh, PharmD- Operations Manager**	**Sabrina Curtis, Pharmacy Resident**
X	**William Haren, MD- Psychiatry**	X	**Lori Hammon, RN- Quality**	X **Carey Smith, RPh- Manager, Georgia**	**Jessica Duke, Pharmacy Resident**
X	**Matthew Kodsi, MD-Quality**	X	**Farrah Reidt, Clinical Nutrition**	X **Chris Chastain- Administrative Coordinator**	
X	**Aditya Mandawat, MD- Interventional Cardiology**				
X	**Chad Paxson, MD- Intensivist/Pulmonology/ICU**				
	Vimal Ramjee, MD- Cardiology				
	James Wahl, MD- Hospitalist, GA				
X	**Richard Yap, MD- Hospitalist**				

This meeting will be convened under the protection of the Tennessee Statute 63-6-219 and the Health Care Quality Improvement Act of 1986, Public Law 99-660. All information, case reviews, meeting minutes, statistics and correspondence are confidential and protected. Included in that protection are those that are involved in the review of the information. Any discussion of this information outside the realm of Peer Review constitutes a breach and violates the protection of the persons involved in the breach.

AGENDA ITEM	FINDINGS OR CONCLUSION	ACTION, RESPONSIBILITY	STATUS
Minutes	The October 2021 minutes were approved as submitted.	Approved	Complete
CommonSpirit Health System P&T Committee	**November 2021 Decision Brief:** The medication decisions that were approved at the CommonSpirit Health System P&T committee meeting were reviewed. All new system formulary medications or changes were either consistent with existing CHI Memorial formulary decisions or are described in the "Formulary Decisions & Therapeutic Interchanges" section of the minutes below, or will be reviewed at an upcoming P&T committee meeting.	Approved	Complete
Formulary Decisions & Therapeutic Interchanges	**1. Remifentanil (Ultiva®):** Remifentanil is a potent IV μ-opiate receptor agonist. The analgesic effects of remifentanil are rapid in onset and offset so it is beneficial in cases in which the patients need to be awake or under lighter sedation/analgesia during the surgery. With the development of our neurosurgery service line, this medication has been requested by Dr. Babu for specific surgical cases. The cost is higher than conventional IV opioids or dexmedetomidine. It was recommend that remifentanil be restricted for ordering as follows: a. Ordering restricted to Anesthesia providers for i. Craniotomies with very low associated post-op pain, or ii. Awake fiberoptic intubations	Approved	Complete
	2. Glycoprotein IIb/IIIa Inhibitors: Aggrastat (tirofiban) is the current formulary product, however availability is currently limited. Eptifibatide is preferential for utilization in neurointerventional procedures requiring stent placement. It does however require refrigeration and a second bolus dose. An updated financial analysis of Aggrastat versus eptifibatide was performed and there is an estimated $6,000 annual cost savings with converting to eptifibatide for the cath lab. Integrilin (eptifibatide) will be the only GPIIb/IIIa agent on formulary. This recommendation was supported by the Invasive Cardiology committee.	Approved	Complete
Medication Use	**1. Impact of MRSA Nasal PCR & Pharmacist Interventions on IV Vancomycin Use:** Linda Johnson presented the results of a medication/diagnostic use evaluation. The purpose of this evaluation was to assess the impact of the pharmacist-driven protocol to automatically order MRSA nasal PCRs combined with antimicrobial stewardship interventions on IV vancomycin days of	Informational	Complete

	therapy for the management of pneumonia. Results demonstrated a lower median IV vancomycin duration, less vancomycin levels ordered, and a 100% physician acceptance rate. There was no difference in LOS or re-escalation to vancomycin. The NPV of the MRSA nasal PCR was 100%.		
Medication Safety	**1. ADR Summary:** Karen Babb presented the adverse drug reaction summary results for July-Sept 2021. There were no trends to report, with the exception of an increase in inpatients on warfarin with an INR >4. For the patients in which a pharmacist was consulted to dose, there were no predictable trends.	Informational	Complete
Policies	**1. Diet Orders**: Farrah Reidt presented updates to the Diet Orders policy, which focused on inclusion of "supplements" which can be ordered by the dietitian. **2. Hypertonic Saline For Adults**: The maximum infusion rate of hypertonic saline to be administered via a central line was clarified by the indication: for hyponatremia, 50 ml/hr; for acute neurologic indications, 70 ml/hr. For neurologic indications, the parameters for holding the infusion and notifying the provider were updated to include a serum sodium of <135 mEq/L. **3. Titrating Medications**: Rachel reviewed proposed updates to this policy which included: a. Parameters for physician notification b. Guidelines for paused titrating medications c. Removal of argatroban (was previously removed from formulary) d. Removal of bumetanide (not a titrating medication; remains on formulary) e. Removal of non-weight-based dosing instructions for epinephrine and norepinephrine **4. Antimicrobial Stewardship Program**: Updated to include applicability of the ASP program to the Georgia campus.	Approved Approved Approved Approved	Complete Complete Complete Complete
Miscellaneous	**1. HIT Antibody Testing Update:** Ann Durham provided an update to the committee on the recent change to heparin induced thrombocytopenia (HIT) antibody testing. All HIT Ab tests are now processed at Erlanger Hospital instead of being sent off the Quest. This is not an ELISA test, so the optical density (OD) values will no longer be reported. Confirmatory SRA testing will automatically be re-drawn (requires a second patient stick) if the HIT Ab is positive. SRA tests will now be sent off to LabCorp, which is interfaced with Epic. Rachel will provide the committee with a journal article provided by Ann that reviews the HIT Ab test.	Informational	Complete

There being no further business, the meeting was adjourned at 7:33 a.m. The next P&T meeting is **February 10, 2022 @ 7:00 a.m.**

Respectfully submitted,
Patrick N. Ellis, PharmD, Director of Pharmacy; Rachel Kile, PharmD, Pharmacy Clinical Manager

Approved by,
Nathan Chamberlain, MD, Chairman

CSH SYSTEM PHARMACY AND THERAPEUTICS COMMITTEE DECISION BRIEF

January 2022 Decisions

NOTE: Local/divisional P&T committees may implement more restrictive statuses

Medication name	Medication Used For	Formulary Decision				Restrictions (if applicable)	Timeline to Implementation
		Do Not Stock	Formulary Restricted	Formulary Unrestricted	Nonformulary		
Amivantamab-vmjw	EGFR and MET receptor bispecific antibody antineoplastic		Rybrevant			Outpatient setting for FDA-approved indications or payer-approved off-label indications subsequent to insurance approval or prior authorization.	Within 90 days of System P&T Committee approval
Asparaginase erwinia chrysanthemi (recombinant)-rywn	Leukemia	Rylaze					Within 60 days of System P&T Committee approval
Bezlotoxumab	Reduction of the recurrence of *C. Difficile* infection		Zinplava			**Outpatient setting** for FDA-approved indications or payer-approved off-label indications subsequent to insurance approval or prior authorization **Inpatient setting** - Administration in the outpatient setting is preferred • Outpatient administration is not possible during active C. Difficile treatment • To ID physicians where available • Patient must meet ALL of the following: o Have a positive stool test for C. Difficile toxin. o Receiving active treatment for C. Difficile infection with oral vancomycin, metronidazole, or fidaxomicin. o Have a history of one or more CDI episodes in the past 6 months o Age 65 years or above* o In addition, the patient must either ▪ Meet ONE of the following:	Within 90 days of System P&T Committee approval

Medication name	Medication Used For	Formulary Decision				Restrictions (if applicable)	Timeline to Implementation
		Do Not Stock	Formulary Restricted	Formulary Unrestricted	Nonformulary		
						• Required ICU admission as a result of the current CDI episode • Presence of pseudomembranous colitis on endoscopy • Immunocompromised status OR ▪ Meet TWO of the following: • Body temperature greater than 38.3°C (100°F) • Serum albumin < 2.5g/dl • WBC > 15,000 cells/ul *May consider for patients with a primary or recurrent CDI episode who are immunocompromised or who have severe disease on a case-by-case basis regardless of age. Bezlotoxumab should be used with caution in patients with underlying congestive heart failure (CHF). The benefits of using bezlotoxumab in this patient population should be weighed against the risk of CHF. Bezlotoxumab **should not** be given to patients who meet ONE of the following exclusion criteria: • Patients who are not expected to survive for 72 hours • Pregnant and lactating women	
Bisoprolol/ Hydrochlorothiazide tablets	Hypertension			Bisoprol/ Hctz		Bisoprolol/HCTZ therapeutic interchange	Within 90 days of System P&T Committee approval
					Ziac		

Medication name	Medication Used For	Formulary Decision				Restrictions (if applicable)	Timeline to Implementation
		Do Not Stock	Formulary Restricted	Formulary Unrestricted	Nonformulary		
Cabotegravir and rilpivirine	HIV infection		Cabenuva			Ambulatory Clinic setting Initiation of therapy is restricted to ID/HIV specialist or other provider with experience in HIV management Administer at an appropriate injection setting by medical professional (local site to determine site based on community HIV resources) Not to be initiated in the inpatient setting. In the occasion that a patient is hospitalized, therapy they will be bridged with daily oral cabotegravir/rilpivirine within 14 days of their anticipated next injection (obtain patient specific supply from specialty pharmacy if necessary)	Within 90 days of System P&T Committee approval
Ipratropium bromide inhaler	COPD				Atrovent HFA	Atrovent therapeutic interchange	Within 60 days of System P&T Committee approval
Ipratropium/ albuterol sulfate inhaler	COPD				Combivent HFA	Combivent therapeutic interchange	
Molnupiravir	COVID-19 treatment		Lagevrio			COVID-19 Indications **Inpatient** If a patient requires hospitalization after starting treatment per the CommonSpirit Health COVID-19 treatment guidelines, the full treatment course of ritonavir-boosted nirmatrelvir (Paxlovid) or molnupiravir can be completed at the health care provider's discretion **Outpatient** Per most recent CommonSpirit Health COVID-19 treatment guidelines subsequent to payor approval when appropriate	Within 90 days of System P&T Committee approval

Medication name	Medication Used For	Formulary Decision				Restrictions (if applicable)	Timeline to Implementation
		Do Not Stock	Formulary Restricted	Formulary Unrestricted	Nonformulary		
Nirmatrelvir-ritonavir	COVID-19 treatment		Paxlovid			COVID-19 Indications **Inpatient** If a patient requires hospitalization after starting treatment per the CommonSpirit Health COVID-19 treatment guidelines, the full treatment course of ritonavir-boosted nirmatrelvir (Paxlovid) or molnupiravir can be completed at the health care provider's discretion **Outpatient** Per most recent CommonSpirit Health COVID-19 treatment guidelines subsequent to payer approval when appropriate	Within 90 days of System P&T Committee approval
Tixagevimab and cilgavimab	COVID-19 pre-exposure prophylaxis		Evusheld			COVID-19 Indications **Inpatient** Per the CommonSpirit Health COVID-19 treatment guidelines **Outpatient** Per most recent CommonSpirit Health COVID-19 treatment guidelines subsequent to payer approval when appropriate	Within 90 days of System P&T Committee approval
COVID-19 vaccine	COVID-19 infection prevention		Janssen COVID-19 vaccine			Restricted to individuals in need of COVID-19 vaccination who are unable (e.g., allergy) or unwilling to receive an mRNA COVID-19 vaccine	Within 90 days of System P&T Committee approval
				COVID-19 vaccine, MRNA (Pfizer & Moderna)			
Dexamethasone ophthalmic	Ocular inflammation				Dexycu		Within 60 days of System P&T Committee approval
Dextrose (sweet cheeks)	Hypoglycemia		Sweet cheeks			Patients less than the age of 2	Within 90 days of System P&T Committee approval

Medication name	Medication Used For	Formulary Decision				Restrictions (if applicable)	Timeline to Implementation
		Do Not Stock	Formulary Restricted	Formulary Unrestricted	Nonformulary		
Dostarlimab-gxly	PD-1 blocking antibody antineoplastic		Jemperli			Outpatient setting for FDA-approved indications or payer-approved off-label indications subsequent to insurance approval or prior authorization	Within 90 days of System P&T Committee approval
Fibrinogen concentrate	Fibrinogen replacement in acute bleeding episodes				Fibryga		Within 60 days of System P&T Committee approval
					Riastap		
Indium 111 octreotide	Radio-diagnostic agent		Indium in-111 dtpa, indium in-111 oxyquinoline, indium-111 chloride			Outpatient setting for FDA-approved indications or payer-approved off-label indications subsequent to insurance approval or prior authorization	Within 90 days of System P&T Committee approval
Margetuximab-cmkb	Metastatic HER2-positive breast cancer		Margenza			Outpatient setting for FDA-approved indications or payer-approved off-label indications subsequent to insurance approval or prior authorization.	Within 90 days of System P&T Committee approval
Oritavancin (Kimyrsa)	Antibiotic active against gram-positive bacteria				Kimyrsa		Within 60 days of System P&T Committee approval
Satralizumab	Neuromyelitis optica spectrum disorder				Enspryng		Within 60 days of System P&T Committee approval
Trilaciclib	To reduce the incidence of chemotherapy-induced bone marrow suppression		Cosela			Outpatient setting for FDA-approved indications or payer-approved off-label indications subsequent to insurance approval or prior authorization	Within 90 days of System P&T Committee approval

THERAPEUTIC INTERCHANGES

Bisoprolol/HCTZ

Order	Interchange to
Ziac 5/6.25 mg	Generic bisoprolol fumarate 5 mg/hydrochlorothiazide 6.25 mg tablet
Ziac 10/6.25 mg	Generic bisoprolol fumarate 10 mg/hydrochlorothiazide 6.25 mg tablet

Atrovent HFA

Order	Interchange to
Atrovent® 1 inhalation 4 times daily	Ipratropium SVN 4 times daily
Atrovent® 1 inhalation 4 times daily	Spiriva® MDI once daily

Combivent HFA

Order	Interchange to
Combivent® 1 inhalation 4 times daily	Albuterol/ipratropium SVN 4 times daily
Combivent® 1 inhalation 4 times daily	Albuterol MDI 4 times daily and Spiriva® MDI once daily

FORMULARY UPDATE

THERAPEUTIC CLASS: μ-opiate receptor agonist

GENERIC NAME: Remifentanil

PROPRIETARY NAME: Ultiva®

BACKGROUND/RATIONALE:

Remifentanil was approved to CHI Memorial formulary last December 2021, with restriction criteria. Since that time, our neurosurgeon and anesthesiologists have requested expansion of utilization criteria to all neurosurgical cases of the head (not spines) in order to ensure fast wake up and quicker neurological assessment regardless if the patient is awake or asleep for the surgery.

CURRENT FORMULARY USE CRITERIA:

- Ordering restricted to Anesthesia providers
- Craniotomies with very low associated post-op pain
- Awake fiberoptic intubations

RECOMMENDATION/DISCUSSION:

It is recommended to revise the current restriction criteria for remifentanil to the following:

- Ordering restricted to Anesthesia providers
- Craniotomies associated with very low associated post-op pain plus the need for rapid emergence and full neurological assessment
- Awake fiberoptic intubations

Utilization of remifentanil will be monitored and reviewed to ensure alignment with the above criteria and will be reported to anesthesia leadership routinely.

Long-Acting Insulins

FORMULARY UPDATE

CURRENT FORMULARY AGENT:
Lantus® (insulin glargine)

BACKGROUND:
Lantus is the preferred insulin in the long-acting insulin category used throughout CommonSpirit Health. Recently, another insulin glargine formulation became available – Semglee (insulin glargine-yfgn, Mylan), a biosimilar agent. In July 2021, the FDA approved Semglee as the first interchangeable biosimilar product in the United States. Per the FDA, an interchangeable biosimilar product may be substituted for the reference product *without* the intervention of the prescriber.

The March 2021 CommonSpirit Health P&T Committee approved Lantus and Semglee as long acting insulin class representatives. The conversion to Semglee as the long acting insulin class representative is now recommended to move forward as a FY22 CommonSpirit Health Pharmacy Clinical Initiative.

PRODUCT COMPARISON: Indications and storage requirements are the same for all insulin glargine products.

PHARMACOECONOMICS/COST:

Product (Drug, Strength, Form)	Cost per vial	Purchase History (12 mos)	Estimated cost savings (12 mos)
LANTUS 100 UNITS/ML SUBCUT VIAL (10 ml vial)	$77.84	873 vials	**n/a**
SEMGLEE 100 UNITS/ML SUBCUT VIAL (10 ml vial)	$67.69	N/A	**$8,860.95**

CONCLUSION/RECOMMENDATION:
Semglee (insulin glargine-yfgn) is fully interchangeable with Lantus, similar to a generic substitution. Semglee will replace Lantus as the long-acting insulin product at CHI Memorial hospitals.
It is recommended to update the existing automatic therapeutic interchange for long acting insulins as follows:

Insulins: Long-Acting	
Insulin glargine (Lantus®)	Insulin glargine-yfgn (Semglee®) Same dosing frequency (1:1 dose conversion)
Insulin detemir (Levemir®)	Insulin glargine-yfgn (Semglee®) Same dosing frequency (1:1 dose conversion)
Insulin glargine (Toujeo®) 300 units/ml	Insulin glargine-yfgn (Semglee®) Same dosing frequency (1:1 dose conversion)
Insulin degludec (Tresiba®) 100 units/ml or 200 units/ml	Insulin glargine-yfgn (Semglee®) Same dosing frequency (1:1 dose conversion)
Insulin degludec/insulin aspart (Ryzodeg® 70/30) (dose based on degludec component; 10 units = 10 units of degludec)	Insulin glargine-yfgn (Semglee®) Same dosing frequency (1:1 dose conversion) * short-acting component should be ordered separately *
Insulin glargine (Basaglar®)	Insulin glargine-yfgn (Semglee®)

	Same dosing frequency (1:1 dose conversion)

Lower Dose PCC (Kcentra®) for Direct Oral Anticoagulant (DOAC) Reversal

BACKGROUND:
The PCC dose currently recommended per the CHI Memorial Antithrombotic Reversal & Surgical Management Guidelines for reversal of oral Factor Xa inhibitors or DOACs is a weight-based dose of 50 units/kg (maximum dose 5,000 units) for major (life-threatening) bleeding. Dosing strategies used across CommonSpirit Health are variable, including weight-based doses of 25 units/kg, 35 units/kg, and 50 units/kg along with fixed-doses of 2000 units.

The optimal dose of Kcentra for reversal of DOACs has not been clearly established and guideline recommendations are variable (Table 1). The dose of 50 units/kg was initially recommended based on animal models and studies in healthy patients. Several studies have since demonstrated hemostatic success with lower doses. Overall, regardless of dosing scheme, average hemostasis ranges from 68-95%. Newer data suggests that lower doses are safe and effective for all indications (Table 3). Studies that have been conducted with a cap dose of 2000 units (including ICH-associated bleeding) have demonstrated safety and efficacy for DOAC reversal.

For patients with unknown or unclear history of DOAC use, or if the time of last dose is unknown or more than 24 hours ago, it is reasonable to check an Anti-Xa level prior to administration of Kcentra. In the absence of drug-specific anti-Xa testing, a Heparin Anti-Xa level may be used to determine qualitative presence of a Factor Xa inhibitor. For Heparin Anti-Xa levels below the threshold of clinical significance (Table 2), it is considered safe for invasive procedures at high risk of bleeding, therefore additional reversal is not indicated and Kcentra may be safely omitted.

Table 1. DOAC Reversal Guideline Summary

Guideline	Indication	Recommendation
Neurocritical Care Society and Society of Critical Care Medicine (2016)	ICH	Xa: aPCC or PCC4 (50 units/kg)
American Society of Hematology (2018)	Life-threatening bleeding	Xa: PCC4
European Stroke Organization (2019)	ICH	Xa: PCC4 (37.5-50 units/kg)
AHA/ACC/HRS (2019)	Life-threatening bleeding or surgery	Xa: no recommendations on aPCC or PCC4
Anticoagulation Forum (2019)	Major and life- threatening bleeding	Xa: PCC4 (2000 units)
American College of Cardiology (2020)	Major bleed	Xa: PCC4 (2000 units) or aPCC (50 units/kg)

Table 2. Anti-Xa Level Thresholds of Clinical Significance

Anticoagulant	Anti-Xa Specific Threshold for relevant anticoagulant effect	Equivalent Heparin Anti-Xa Level Threshold
Apixaban	> 30 ng·mL-1	≥ 0.2 IU·mL-1
Rivaroxaban	> 30 ng·mL-1	≥ 0.3 IU·mL-1
Fondaparinux	> 0.1 μg·mL-1	≥ 0.1 IU·mL-1

Table 3. Clinical Studies Evaluating Low Dose PCC for DOAC Reversal

Study	**Dose**	**# pts**	**Type of Bleed**	**Median Dose**	**DOAC**	**Median time from last dose**	**Outcomes**
Majeed 2017	<65kg: 1500 IU ≥65kg: 2000 IU	92	Acute or active major bleeding (MB); 70.2% ICH	26.7 IU/kg	53.6% rivaroxaban, 46.4% apixaban	12.5 hours	69.1% hemostatic efficacy overall; ICH: 72.9%
Schulman 2018	2000 IU; Repeated dose per provider discretion - given in 2 instances	71	MB; 55% ICH	26.4 IU/kg	56% rivaroxaban, 44% apixaban	16.9 hours	"Good" effectiveness of PCC per provider assessment = 65% overall; ICH 67%; GI Bleed 69%
Berger 2020	25 IU/kg	20	ICH	25.9 IU/kg	68.2% rivaroxaban, 22.7% apixaban	Not reported	94.7% hemostatic efficacy across entire population
Kim 2020	Fixed-dose: 2000 IU, may repeat x1 if hemostasis not achieved Weight-based dose: 35 or 50 IU/kg based on bleed severity for FXa	46	Need of surgical intervention or procedure, trauma, GI bleeding, or ICH (38.2% fixed vs 36.8% weight-based)	29.8 IU/kg (fixed) vs 43.6 IU/kg (weight-based)	Not reported	Not reported	Hemostatic efficacy 95.0% fixed vs 76.9% weight-based (p=0.091)
Wilsey 2020	Low-dose: 20-34 IU/kg High-dose: 35-50 IU/kg	99	Major bleeding or need for urgent surgery 60.8% vs 73% with ICH	26.6 IU/kg (fixed) vs 47.6 IU/kg (weight-based)	Low-dose 47.7% apixaban High-dose 76.2% apixaban	15 hours	Good or Moderate hemostatic success per Schulman et al definitions; 75.4% low vs 78.6% high (p=0.715) hemostatic efficacy between low and high-dose ICH: 77.4% vs 74.1% (p=0.766)
Hormese 2021	High-dose: 50 IU/kg (max 5000) Low-dose: 25 IU/kg (max 2500) w/ optional repeat dose of 25 IU/kg if satisfactory reversal not achieved with initial dose	47	Life-threatening bleeding; 73.9% high vs 70.8% low with ICH	High dose: 49.2 IU/kg Low dose: 24.2 IU/kg	Low dose: 82.6% apixaban High-dose: 66.7% apixaban	72.3% within 24 hours of reversal	Excellent or Good hemostatic success per Sarode et al definitions; 91.3% vs 87.5% ICH: 100% vs 88.2%
Cascone 2021	Low-dose: 25 IU/kg Standard-dose: 50 IU/kg	93	Spontaneous or traumatic ICH		Low dose: 40.3% apixaban High dose: 58.1% apixaban	14.5 hrs	Hemostatic efficacy 82.3% vs 83.9% (p=0.846)

PHARMACOECONOMICS/COST:
From June-December 2021, 35 Kcentra doses of 2000 units or greater were administered. Of those 35 doses, 31 were for DOAC reversal (50 units/kg).

Product & Dose	**Utilization (7 months)**	**Medication Cost (per 7 months) ($2/unit)**	**Estimated annual cost savings (12 mos)**	**Estimated monthly cost savings**
Kcentra 50 units/kg	123,430 units administered	**$246,860**	**n/a**	**n/a**
Kcentra 2000 units x1 dose (repeat dosing only occurred in ~3-5% of patients in studies)	62,000 units (estimated 31 doses)	**$124,000**	**$210,800**	**$17,500**

CONCLUSION:
The recommended starting dose of Kcentra for DOAC reversal is a lower dose 25 units/kg actual body weight (maximum dose of 2500 units). A single repeated dose of up to 25 units/kg (maximum dose of 2500 units; maximum total dose of 5000 units) may be recommended within 6 hours after the initial dose if adequate hemostasis is not achieved and/or maintained. A fixed dose strategy of 2000 units with the option to repeat 2000 units (maximum total dose of 4000 units) should also be considered. All doses should be rounded to the nearest vial size (as we currently do). A dose of 25 units/kg with a max of 2500 units equates to a 100 kg patient which is a reasonable assumption on average patient weight.

The physician leadership of the following service lines have approved a lower fixed dose (2000 units) strategy): AA, EP, CV surgery, critical care, ED. Neurology and neurointerventional prefer fixed dosing, but use of 2500 units instead of 2000 units, for ICH based on the studies which evaluated lower dose weight-based dosing at 25 units/kg with a max dose of 2500 units. Neurosurgery is in agreement.

At CHI Memorial, there is an estimated annual cost savings of approximately $210,000 if Kcentra dosing for DOAC reversal is changed from 50 units/kg to a 2000 units fixed dose.

RECOMMENDATION:
After discussion with all service lines utilizing Kcentra for DOAC reversal, the following lower dosing strategy is recommended for the indication of DOAC reversal:

- 2000 units
- If ICH (spontaneous or traumatic) use 2500 units
- May repeat the same dose once within 6 hours of the initial dose if hemostasis is not achieved and/or maintained

The CHI Memorial Antithrombotic Reversal & Surgical Management Guidelines for reversal of oral Factor Xa inhibitors or DOACs and the Anticoagulation Management policy will be updated.

Medications for COVID-19: Update

Emergency Use Authorization (EUA) Medications		
	Current Process	**Recommended Action**
Tocilizumab (Actemra)	Pharmacist automatic therapeutic interchange to either product based on product availability	Maintain current process
Baricitinib (Olumiant)		
Bamlanivimab/etesevimab	Federal government (HHS) manages supply and determines which product will be shipped to each state. State of TN and GA then allocates mAb to select sites.	Approve pharmacist automatic therapeutic interchange of products based on product availability and anticipated efficacy against variant(s) of concern (per CDC/FDA guidance).
Casirivimab/imdevimab (Regen-COV)		
Sotrovimab		
Nirmatrelvir and ritonavir (Paxlovid)*	Non-formulary. Federal government (HHS) manages supply and determines which product will be shipped to each state. State of TN then allocates products to select sites.	Do not add to formulary. Allow continuation of patient's home supply upon hospital admission, if ordered to continue by the admitting physician. Patients must provide their own supply.
Molnupiravir		

*Per the PAXLOVID fact sheet: "Should a patient require hospitalization due to severe or critical COVID-19 after starting treatment with PAXLOVID, the patient should complete the full 5-day treatment course per the healthcare provider's discretion."

COVID-19 Vaccines		
	Current Process	**Recommended Action**
Pfizer-BioNTech COVID-19 Vaccine (Adult formulation)	Formulary for inpatient use; includes booster doses	Maintain current process
Moderna COVID-19 Vaccine	Non-formulary for inpatient use	Maintain current process
Janssen (J&J) COVID-19 Vaccine	Non-formulary for inpatient use	Maintain current process

Use/Restriction Criteria Approved by COVID-19 Medications Subcommittee

Remdesivir Criteria: Inpatients (updated 2/1/22)**:**

5 (FIVE) day course of IV remdesivir (200 mg IV x 1 dose, followed by 100 mg IV daily x 4 days) or until hospital discharge, whichever comes first.

Inclusion criteria:

- COVID-19 (+)
- **≤5** days since symptom onset or positive test (whichever comes first)

Exclusion criteria:

- **No greater than 5L of supplemental oxygen to maintain an O2 Sat of 92%**
- ALT > 5x ULN
- If the provider determines the patient has end stage comorbidities, it is reasonable to withhold remdesivir and the palliative care screening tool is available to assist with decision making regarding therapy initiation.

-Renal function must be tested prior to starting remdesivir. Remdesivir should be used with caution in patients with an eGFR <30 mL/min (dose has not been studied & the infusion may cause further injury)

-If patient does not meet the specified criteria but you feel your patient may benefit from remdesivir, ID approval must be obtained.

Remdesivir Criteria: Incidental COVID+ (symptomatic) while admitted for non-COVID diagnosis (developed 2/1/22)**:**
(SOTROVIMAB preferred, when available)

3 (THREE) day course of IV remdesivir (200 mg IV x 1 dose, followed by 100 mg IV daily x 2 days) or until hospital discharge, whichever comes first.

Inclusion criteria:

- COVID-19 (+) with mild to moderate symptoms
- ≤7 (SEVEN) days since symptom onset or positive test (whichever comes first)
- Immunocompromised regardless of vaccine status (defined below)
- Unvaccinated (aged ≥ 75 alone or ≥ 65 + risk factor(s))

Exclusion criteria:

- Hospitalized due to COVID-19
- ALT > 5x ULN
- If the provider determines the patient has end stage comorbidities, it is reasonable to withhold remdesivir and the palliative care screening tool is available to assist with decision making regarding therapy initiation.

-Renal function must be tested prior to starting remdesivir. Remdesivir should be used with caution in patients with an eGFR <30 mL/min (dose has not been studied & the infusion may cause further injury)

-If patient does not meet the specified criteria but you feel your patient may benefit from remdesivir, ID approval must be obtained.

Immunocompromising Conditions (per NIH)
Patients who are within 1 year of receiving B-cell depleting therapies (e.g., rituximab, ocrelizumab, ofatumumab, alemtuzumab) **Patients receiving Bruton tyrosine kinase inhibitors** **Chimeric antigen receptor T cell recipients** **Post-hematopoietic cell transplant recipients who have chronic graft versus host disease or who are taking immunosuppressive medications for another indication** **Patients with hematologic malignancies who are on active therapy** **Lung transplant recipients** **Patients who are within 1 year of receiving a solid-organ transplant (other than lung transplant)** **Solid-organ transplant recipients with recent treatment for acute rejection with T or B cell depleting agents** **Patients with severe combined immunodeficiencies** **Patients with untreated HIV who have a CD4 T lymphocyte cell count <50 cells/mm3**

Risk Factors (https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html)	
Cancer **Chronic kidney disease** **Chronic liver disease** **Dementia or other neurological conditions** **Diabetes** **Down syndrome** **Heart conditions** **HIV infection** **Immunocompromise** **Mental health disorders**	**Overweight and obesity** **Pregnancy** **Sickle cell disease or thalassemia** **Smoking** **Solid organ or stem cell transplantation** **Stroke or cerebrovascular disease** **Substance use disorders** **Tuberculosis** **Older adults (>65 years)**

Pharmacist-Driven Stress Ulcer Prophylaxis De-escalation Protocol

Background/Rationale:

No published clinical trials have established a mortality benefit for the use of stress ulcer prophylaxis (SUP) in the intensive care unit (ICU); however, there are concerns regarding potential complications with its use. The SUP-ICU trial found no statistically significant difference in clinically significant bleeding between patients who received SUP compared to those who did not receive SUP.

- Risks of PPI therapy include:
    - Increased risk of *Clostridium difficile*
    - Increased risk of developing hospital acquired pneumonia (HAP)
    - Hypomagnesemia
    - Vitamin B12 deficiency

Additionally, it is estimated that approximately 60% of SUP is inappropriately continued post-ICU discharge, and 35% of patients are discharged home on inappropriate SUP.

Proposal:

- Refer to Chart 1.
- Pharmacists will follow eligible critically-ill patients and assess the need for SUP (defined as IV or PO famotidine or pantoprazole) daily.
- Pharmacists will automatically discontinue orders for SUP within the ICU if the predefined criteria in Chart 1 is not met.
- The pharmacist will notify the provider of any action taken.

Evaluation:

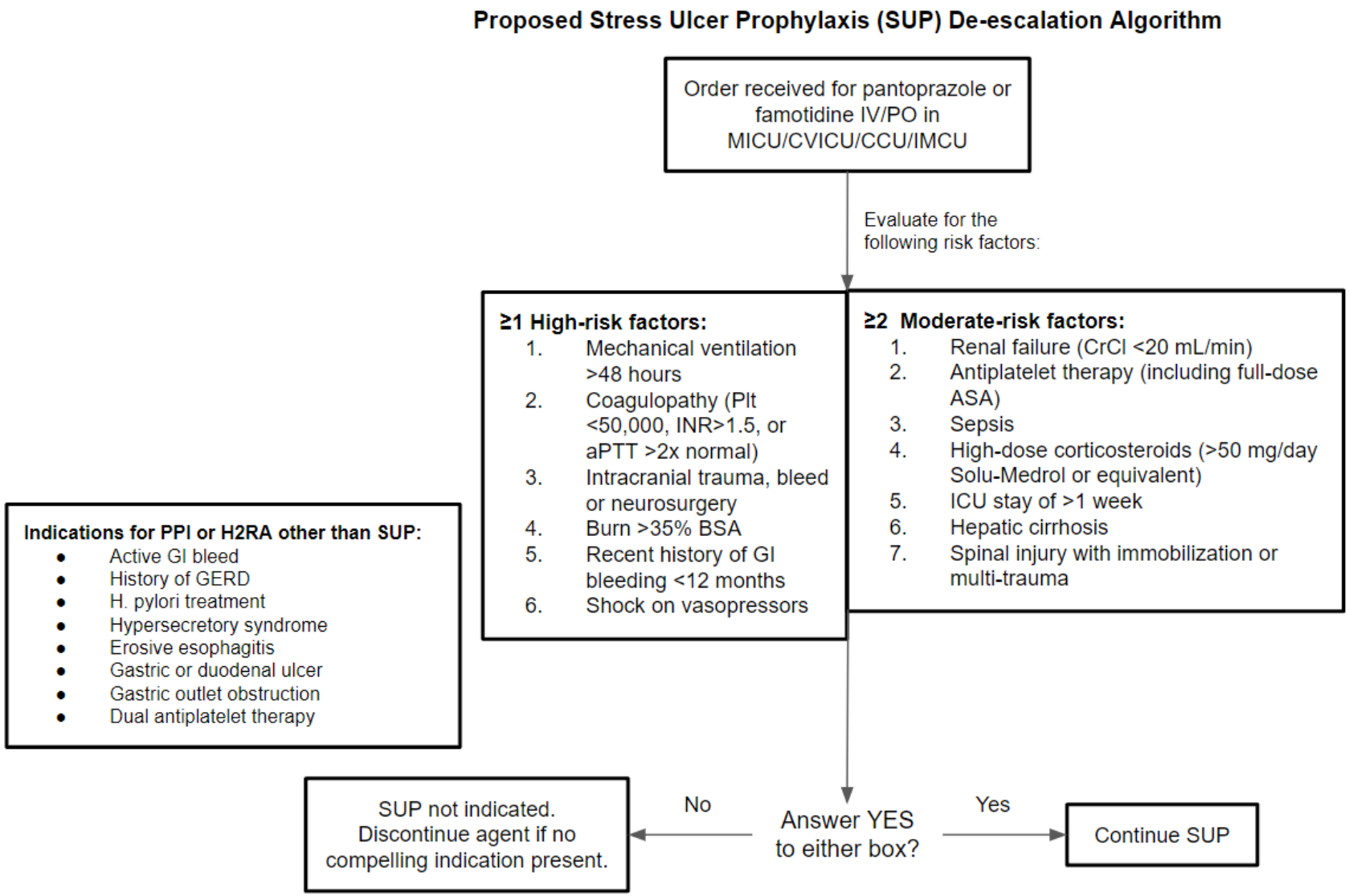
- Data will be collected pre and post-protocol implementation to assess the number of patients continued on SUP without an indication 24 hours after initiation of H2RA/PPI based on the predefined criteria.
- The following secondary outcomes will also be assessed:
    - Patients on PPIs who developed in-hospital pneumonia or CDI
    - Incidence of clinically significant GI bleeding
    - Patients transferred out of ICU on SUP without an indication
    - Patients discharged home on SUP without an indication
- Results will be shared with the P&T Committee for discussion upon completion of the evaluation.

Recommendation/Discussion:

This quality improvement initiative has been shown to reduce inappropriate SUP use without increasing the risk of clinically significant bleeding within other healthcare institutions. It is recommended to adopt the proposed protocol and therefore approve a pharmacist-driven automatic discontinuation of famotidine and/or pantoprazole when the patient meets the specified criteria.

These recommendations have been reviewed and are supported by Dr. Jesse Tucker, Dr. Chad Paxson, and Dr. Lee Hamilton.

Chart 1. Proposed Pharmacist-Driven Stress Ulcer Prophylaxis (SUP) De-escalation Criteria



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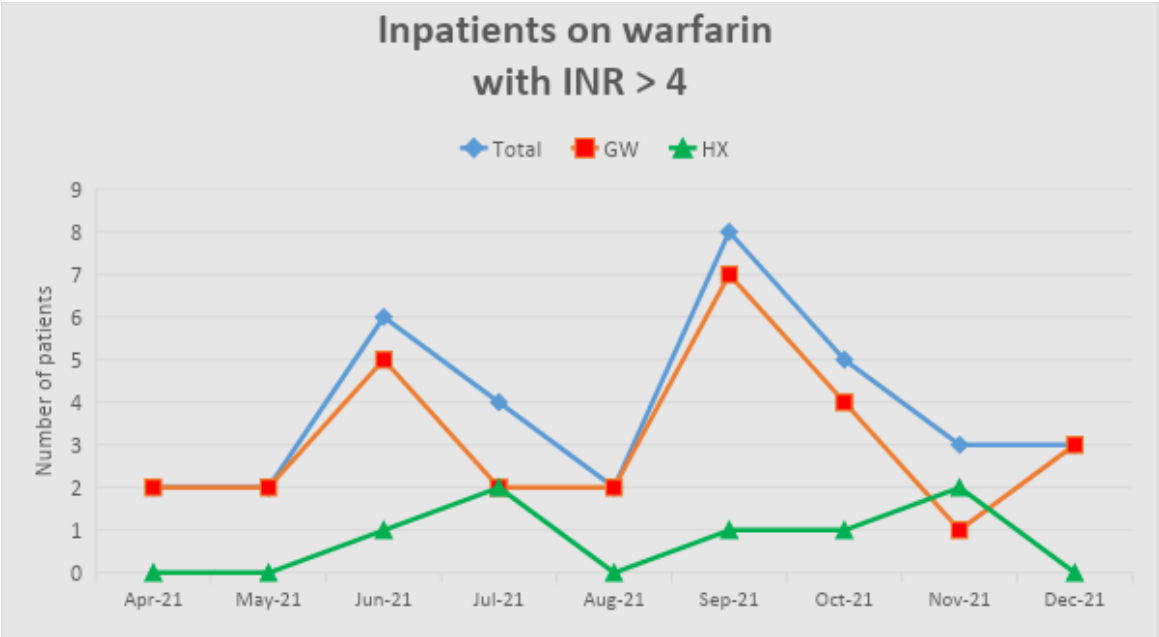
ADR Summary
October - December 2021

Inpatient ADRs/ADEs reported through IRIS Oct-Dec 2021							
Incident Number	**Event Date**	**Drug**	**Reaction**	**Primary Injury**	**Level of Harm**	**Facility**	**Unit**
210117188	12/17/2021	Dexmedetomidine	infiltration	redness at IV site	2	GW	CVICU
210113990	12/9/2021	Amiodarone	infiltration	extravasation	3	GW	CSSU

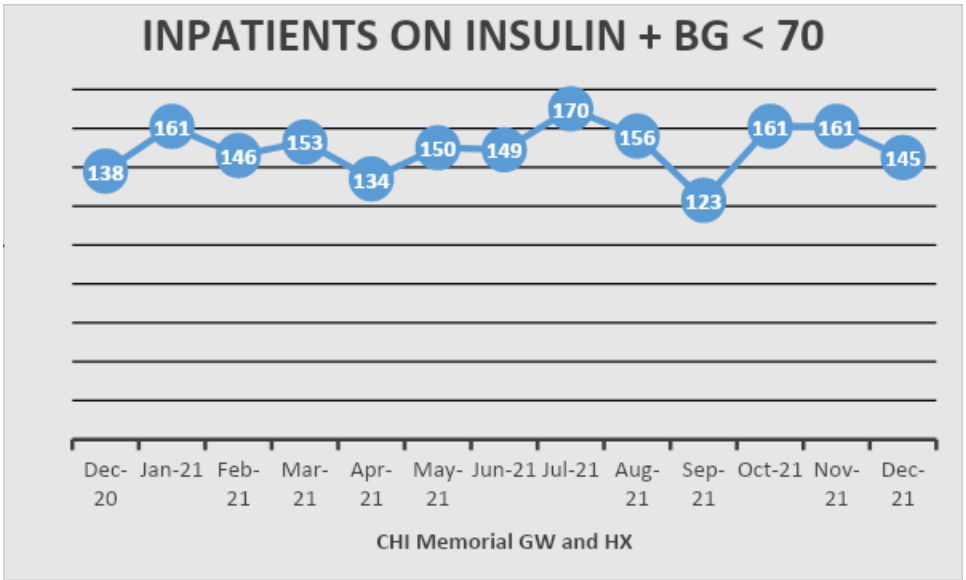
Inpatient ADRs/ADEs reported through EPIC Oct-Dec 2021						
Patient HAR	**Event Date**	**Drug**	**Reaction**	**Level of Harm**	**Facility Name**	**Unit**
20991213495	10/12/2021	cefepime	neurotoxicity w/myoclonic jerking	3	GW	6NO
20991356596	12/2/2021	vit K	diffuse body aches immediately after IV dose	2	GW	2 SO

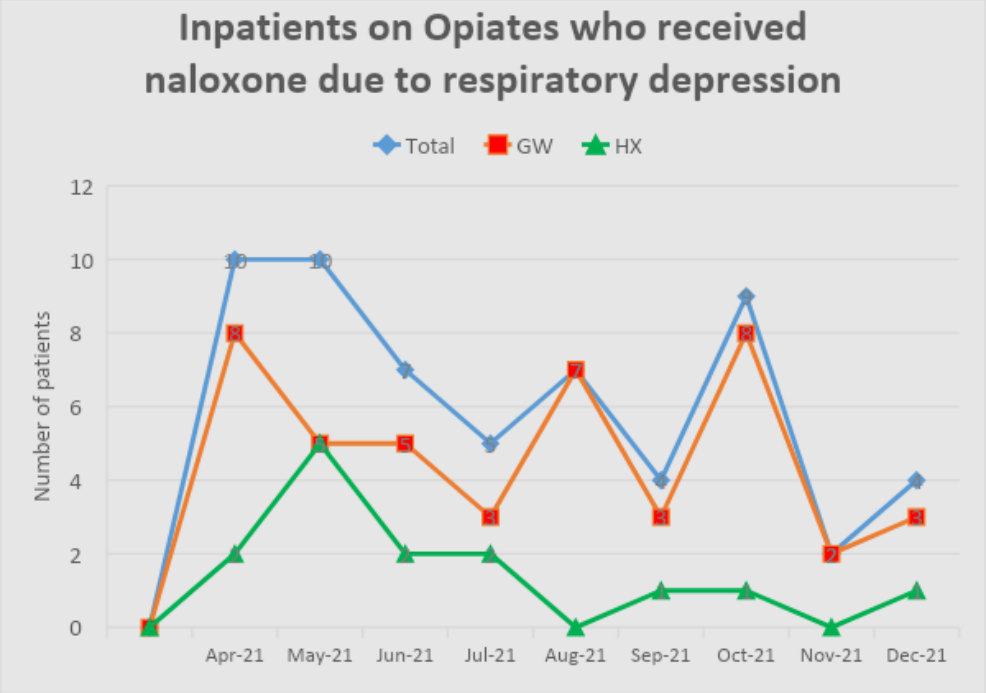
TARGETED ADRs/ADEs
INPATIENT



INPATIENT elevated INRs also receiving warfarin Oct, Nov, Dec 2021				RX Dosing
Month	MRN	Location	Notes	
Oct	6054666	3 SO	Pharmacy not dosing. Here for joint replacement, on sliding scale warfarin.	N
Oct	6655090	6 NO	Also on Heparin drip for bridge therapy. Dced once INR became supratherapeutic.	N
Oct	5825506	IMCU	Also on Amiodarone. Dose adjusted after pharmacy consulted.	N
Nov	5935293	SSU	Pharmacy not dosing. Here for ablation. Took half of regular dose at home night before. Elevated INR AM of procedure.	N
Nov	5644757	NPU3	Pharmacy not dosing. Started on cefuroxime which could be a contributor. When Pharmacy notified provider of elevated INR, we were asked to take over dosing.	N

*These are the patients that a pharmacist was NOT consulted to dose warfarin.




Inpatients on Opiates who received naloxone due to respiratory depression
Total
GW
HX
Number of patients
12
10
8
6
4
2
0
Apr-21
May-21
Jun-21
Jul-21
Aug-21
Sep-21
Oct-21
Nov-21
Dec-21

Performance Improvement Chapter PI.01.01.01 for The Joint Commission:
The hospital collects data on the following: adverse events related to using moderate or deep sedation or anesthesia.

- **Of the above inpatients on opiates who received naloxone, we are now reviewing the chart to determine if naloxone was administered within 12 hours of a patient receiving anesthesia.**

Naloxone administrations Oct, Nov, Dec 2021				
Date	**MRN**	**Location**	**Notes**	**Given within 12 hrs of anesthesia?**
10/1/2021	**5747904**	**2 SO**	**Narcan 0.1 mg INJ x1 in response to patient's mentation.**	**Y**
10/15/2021	6654378	2 SO	Administered **narcan** secondary to over sedation (lethargic, SBP in 60s). Halved oxycodone dose (now 5 mg) given @ 1000. Pt found lethargic @ 1200. @ 1400 patient did not wake when RN entered room = unarousable + BP 70/50 + RR 8. Second **dose of Narcan** was then given. Patient is narcotic dependent.	N
10/29/2021	5770760	2 SO	Patient unarousable. Responded positively to Narcan.	N
10/20/2021	**5650053**	**3 SO**	**Oversedation from opioids responded to Narcan 2 mg. D/c'd oxy + morphine. Trial low-dose Norco, cont Ultram**	**Y**
10/13/2021	6407597	6 NO	Patient became responsive sp Narcan 0.2 mg IV x2	N
10/27/2021	5764115	6 NO	Pt was given ativan + dilaudid for anxiety and pain yelling out, then narcan x2	N
10/22/2021	6647520	7 NO	Pt received Narcan x4 doses w/o significant improvement in his mental status. Then moved to IMCU for pressor requirements.	N
10/31/2021	6194231	MICU	Administered narcan due to hemodynamic instability. She had large melanotic bowel movement, which contributed to the unstable hemodynamics.	N
10/10/2021	5772628	HXNU2	Narcan 0.1 mg x1. Believe patient took some form of sedating medication (not provided by hospital). Pt UDS (+) for BZDPs and opiates. Numerous previous ER visits for overdose. Pt has narcan at home, but "does not intend to use any drugs".	N
11/3/2021	5640032	MICU	NSTEMI patient. Made DNR.	N
11/20/2021	5764644	4 SO	Received 2 doses. Recently received Xanax, Roxicodone, and Zanaflex, as these are home meds patient takes regularly. Admitted for encephalopathy.	N
12/3/2021	6255983	5 SO	Found unresponsive due to alcohol and Pain medications, seen in ED and recovered.	N
12/29/2021	**5959904**	**PACU**	**Received 1 dose of dilaudid, then 2 doses of naloxone 2 hours later.**	**Y**
12/25/2021	5601867	MICU	Found to be unresponsive, but later determined patient had a stroke.	N
12/15/2021	6278136	HXNU3	Found unresponsive in bathroom. States she took a "little blue pill from friend"	N

DEFINITIONS:

Adverse Drug Reaction: any unexpected, unintended, undesired, or excessive response to a drug that
a. Requires discontinuing the drug (therapeutic or diagnostic)
b. Requires changing the drug therapy
c. Requires modifying the dose (except for minor dosage adjustments)
d. Necessitates admission to a hospital
e. Prolongs stay in a health care facility
f. Necessitates supportive treatment
g. Significantly complicates diagnosis
h. Negatively affects prognosis
i. Results in temporary or permanent harm, disability, or death
Consistent with this definition, an allergic reaction (an immunologic hypersensitivity, occurring as the result of unusual sensitivity to a drug) and an idiosyncratic reaction (an abnormal susceptibility to a drug that is peculiar to the individual) are also considered ADRs.

Adverse Drug Event: A patient injury resulting from a medication, where the patient outcome is death, life threatening (real risk of dying), hospitalization (initial or prolonged), disability (significant, persistent, or permanent), congenital anomaly, or required intervention to prevent permanent impairment or damage.1

ADR reports may be generated by different mechanisms as deemed appropriate by Pharmacy and the Medication Safety Committee, such as:

a. Suspected ADRs will be reported in IRIS when they occur by any physician or hospital employee who handles or administers medications.
b. Potential ADRs may be identified by monitoring utilization of trigger medications, such as naloxone, phytonadione, flumazenil, etc.
c. Occurrence rates of specific patient care events (ie. INRs >4, BG <70 + insulin, etc), may be monitored to evaluate safety of specific treatment modalities.

ASHP Guidelines on Adverse Drug Reaction Monitoring and Reporting, Medication Safety—Guidelines, pg 264-266

Level of Harm as defined in IRIS:

Level 00 – Near Miss
Level 01 – No Detectable Harm
Level 02 – Minimal Harm
Level 03 – Moderate Harm
Level 04 – Severe Harm
Level 05 – Death

POLICY

Title: ANTICOAGULATION MANAGEMENT			
		Page 1 of 4	
Policy Number: MM-05401		Date ~~Last~~ reviewed/Revised: ~~05/19~~2/22	Valid Until: ~~05/22~~2/25
Campus: ☒ CHI Memorial Glenwood ☒ CHI Memorial Hixson ☒ CHI Memorial Georgia *Check all that apply*			
Department(s) Affected: All Clinical Areas		Review Period: Every 3 years	

OUTCOME: To reduce the likelihood of patient harm associated with the use of anticoagulation therapy.

PURPOSE:
To implement a defined anticoagulant management program to individualize the care provided to each patient receiving anticoagulant therapy.

1. To reduce compounding and labeling errors, the hospital uses only oral unit dose products, pre-filled syringes, or pre-mixed infusion bags when these types of products are available.
    a. Warfarin: Tablets are only dispensed in unit-of-use packaging by pharmacy and may not be split to obtain doses (unless by pharmacy and packaged accordingly). If the total dose is unable to be provided via a single unit dose package, multiple unit-dose packages may be combined to obtain the desired dose (Example: A 7.5 mg dose = one 5 mg tablet + one 2.5 mg tablet).
    b. Intravenous Heparin: Only the standard pre-mixed 50 unit/ml heparin drip concentration (25,000 units/500 ml) can be used for therapeutic purposes ~~at MHCS~~ and can be only stocked within the pharmacy department and within designated Pyxis machines. Heparinized saline 2 unit/ml (1000 units/500 ml NS) is stocked for use only in cardiac cath labs, surgery, vascular procedure areas and central supply.
    c. Heparin Vials: Only the following concentration vials are stocked for use ~~at MHCS~~: 1000 unit/ml (10 ml and 30 ml vials), 5,000 unit/ml (1 ml vial), and 100 unit/ml (5 ml vial). Only the concentrations that are routinely used within each area will be loaded into the Pyxis machines on the corresponding patient care units and procedural areas. Heparin vials will only be loaded into secured ~~Pyxis~~ drawers ~~(mini-drawers & CUBIE pockets)~~ within the automated dispensing cabinet ~~Pyxis~~ machines as per the High Risk Medications Policy.
    d. Low Molecular Weight Heparin (enoxaparin): Each weight-based dose is rounded to the nearest 10 mg and the closest commercially available syringe is dispensed.
2. The hospital uses approved protocols for the initiation and maintenance of anticoagulation therapy appropriate to the medication used, to the condition being treated, and to the potential for medication interactions.
    a. Warfarin: Pharmacy-based warfarin dosing service is offered as a consult-service for hospital management of warfarin. All patients receiving warfarin are monitored through computer generated alerts regarding potential opportunities to improve warfarin management and prevent potential adverse drug reactions. The reports are reviewed daily by a pharmacist and the prescribers will be contacted as needed regarding the need for changes in the patient's warfarin management as clinically necessary.
    b. Warfarin Dosing Guidelines: Guideline for healthcare professionals to utilize when dosing inpatient warfarin. As a guideline, it gives general information for managing warfarin, but all final dosing decisions are made by the provider based on their clinical judgment subject to the condition being treated and to the potential for medication interactions.
    c. Heparin: One standard weight-based heparin ~~protocol~~ drip order set is used for the therapeutic use of heparin ~~at MHCS~~. ~~An electronic copy of the weight-based protocol is~~The medication administration record (MAR) generate~~s~~d for each patient ~~outlining~~ the ~~patient~~ specific initial drip rate and bolus dose(s). Non weight-based protocol heparin infusions are only initiated pursuant ~~of~~ to orders with clear instructions including specific monitoring and titration parameters for such orders. See *High Alert Medications* policy for nursing documentation requirements for dose adjustments, pump setting changes, etc.

d. Low Molecular Weight Heparin (enoxaparin): Lovenox (enoxaparin) dosing protocol available for physician use. The hospital approved dosing for renal failure (CrCl < 30 ml/min) and dosing in obese patients (BMI > 50 kg/m2) is as follows:
    i. Renal failure (prophylaxis): Any prophylactic dose (40 mg daily, 30 mg BID, etc.) of enoxaparin may automatically be adjusted by pharmacy to the appropriate renal adjustment dose.
    ii. Renal failure (treatment dose): Pharmacy may automatically adjust patients with CrCl < 30 ml/min to 1 mg/kg once daily. If CrCl < 20 ml/min, pharmacy will order an anti-Xa level to determine if once daily dosing with enoxaparin is appropriate. Abnormal lab results will be communicated directly to physician.
    iii. Obesity (prophylaxis): Recommended dose of 40 mg BID.
    iv. Obesity (treatment): Actual body weight to be used for dosing in patients >150 kg. Anti-Xa levels will be monitored following 3rd dose to ensure adequate dosing for patients > 190 kg.

e. Fondaparinux: DVT prophylaxis assessment orders available for physician use. All patients receiving fondaparinux are monitored through the daily generation of reports that highlight the current prophylaxis or treatment dose, recent serum creatinine and platelet counts, and patient weight to ensure that the dose is appropriate based on use, renal function, and weight. The hospital approved dosing for renal failure (CrCl < 30 ml/min) is as follows:
    i. Renal failure (prophylaxis): Pharmacy may automatically substitute Lovenox 30 mg daily for CrCl of 10-30 ml/min. The prescriber must be contacted if CrCl < 10 ml/min.
    ii. Renal failure (treatment dose): Prescriber contacted for recommendation to use the heparin weight based protocol as an alternative.

~~f. Argatroban: Standard weight based argatroban protocol is available for use in patients requiring therapeutic anticoagulation with suspected or confirmed heparin-induced thrombocytopenia (HIT) or other intolerance to heparin. Non weight-based orders not conforming to the standard weight based protocol are only initiated pursuant of orders with clear instructions including specific monitoring and titration parameters for such orders. See *High Alert Medications* policy for nursing documentation requirements for dose adjustments, pump setting changes, etc.~~

~~g.~~ f. Angiomax (bivalirudin): Standard weight based bivalirudin protocol is available for use in patients requiring therapeutic anticoagulation with suspected or confirmed heparin-induced thrombocytopenia (HIT) or other intolerance to heparin. Non weight-based orders not conforming to the standard weight based protocol are only initiated pursuant of orders with clear instructions including specific monitoring and titration parameters for such orders. See *High Alert Medications* policy for nursing documentation requirements for dose adjustments, pump setting changes, etc. *Applies only to the bivalirudin weight based protocol and not for bivalirudin use in PCI or other invasive procedures such as vascular surgery,cardiac surgery, etc.*

~~h.~~ g. Direct oral anticoagulants - DOACs (apixaban, rivaroxaban, dabigatran): All orders for DOACs will be evaluated daily by pharmacy staff for appropriateness based on indication, dose, and renal function. Any orders requiring adjustments due to indication or renal function will be communicated to providers for clarification.

3. For patients starting on warfarin, a baseline International Normalized Ratio (INR) is available, and for all patients receiving warfarin therapy, a current INR is available and is used to monitor and adjust therapy.
    a. Baseline INR: Baseline INR is defined as an INR drawn within 72 hours prior to warfarin initiation. This INR is required and automatically ordered for all patients with new inpatient orders for warfarin. Initial warfarin doses will not be dispensed until the INR result has been evaluated by a pharmacist. If INR > 3, the pharmacist will make a professional decision if order is appropriate or if provider needs to be contacted prior to dispensing. For patients undergoing elective orthopedic procedures a pre-operative INR no more than 2 weeks prior to surgery will be used as a baseline INR.
    b. Current INR: Daily INR values are ~~required and~~ automatically ordered by pharmacy (if not already done) while receiving warfarin. If the INR is stable, it may be ordered every other day.
4. When dietary services are provided by the hospital, the service is notified of all patients receiving warfarin and responds according to the established **FOOD AND DRUG INTERACTION / EDUCATION (MM-05450)**.
5. When heparin is administered intravenously and continuously, the hospital uses ONLY programmable infusion pumps in order to provide consistent and accurate dosing.
6. For patients who are receiving heparin, enoxaparin, or DOACs the following baseline and ongoing laboratory tests are required:

a. Heparin (weight based protocol): Monitoring parameters and frequency of monitoring as outlined within the standard heparin weight based protocol as follows:
   i. Baseline labs: PTT, PT/INR, CBC prior to initiating protocol (if not drawn within last 48 hours). If baseline PTT > 50 or INR > 2 or platelets < 100,000, notify physician before initiating protocol. If two consecutive PTT's > 1086 or < 574, physician will be notified.
   ii. Subsequent labs: CBC every third day. Initial PTT 6 hours after initial heparin bolus OR any rate change. If PTT within therapeutic range, PTT will be repeated in 12 hours.
   ~~ii.~~iii. If a baseline or subsequent lab cannot be drawn for any reason, notify provider.

b. Heparin infusions other than weight based protocols: All non-weight based protocol heparin infusion orders must be accompanied with clear monitoring instructions including frequency of PTT testing and titration parameters for such orders.

~~c.~~ Enoxaparin & Fondaparinux: Baseline serum creatinine and platelet count within 24 hours of initiation and at least every 7 days. Required labs will be automatically ordered by pharmacy (if not already done) while receiving enoxaparin and fondaparinux.

c.

d. DOACs: Baseline serum creatinine within 24 hours of initiation and at least every 3 days. Required labs will be automatically ordered by pharmacy (if not already done).

7. Guidelines for reversal of anticoagulation of bleeding events & perioperative management: See table 1 below for approved recommendations.
8. The hospital provides education regarding anticoagulation therapy to prescribers, required clinical staff, patients, and families.
   a. Clinical Staff: Nursing, Pharmacy and Dietary staff will be assigned required education covering patient safety and clinical effects of patients receiving anticoagulation.
   b. Patients/families: At the point of discharge, patients/families will receive education from their primary nurse if the patient is to continue warfarin, enoxaparin, or DOAC beyond discharge. Educational materials are located in eCRS (Mosby's Nursing Consult).
9. The hospital evaluates its anticoagulation safety practices, takes appropriate action to improve its practices, and measures the effectiveness of those actions on a regular basis.

Table 1.

Anticoagulant Bleeding & Perioperative Management Recommendations* 02/2219

Drug Class	*Non-Urgent*	*Urgent - Bleeding or immediate surgery necessary*	*Comments*
Anti-platelet Agents	Hold 5 days prior to procedure* o Plavix® (clopidogrel) o Brilinta® (ticagrelor) Hold 7 days prior to proc.* o Effient® (prasugrel) o Aggrenox®(ASA/dyprid.)	• Consider platelet transfusion	• Caution advised in patients with cardiac stents • Abrupt discontinuation can increase risk of acute stent thrombosis
Unfractionated Heparin	• Infusion: Stop infusion 2 – 6 hours prior to procedure • SQ doses: Hold the evening dose prior to the procedure	• Protamine sulfate: 1 mg for every 100 units of heparin given in previous 3 hrs (max dose: 50 mg single dose or 100 mg in 2 hr period)	• aPTT can be utilized to determine degree of anticoagulation
Low Molecular Weight Heparins	• The last dose should be given 24 hours before the procedure. *i.e., enoxaparin at a dose of 1 mg/kg ONCE 24 hrs prior to surgery if dose was 1 mg/kg BID.*	• Wait 24 hours if possible • Consider protamine sulfate if delay not possible for high bleed risk procedure (only partially reverses LMWH) • Protamine sulfate (based on last dose): LMWH administered ≤ 8 hrs: 1 mg protamine per 1 mg LMWH LMWH administered > 8 hrs: 0.5 mg protamine per 1 mg LMWH	• Elimination can be further delayed in patients with acute or chronic kidney disease • Anti Xa assay can be used to assess degree of anticoagulation
Indirect Factor Xa Inhibitor			
Arixtra® (fondaparinux)	• Hold 36-48 hours prior to procedure	• No specific antidote • rVIIa – limited data available *consider low dose (1-2 mg) and assess response*	• Elimination can be further delayed in patients with acute or chronic kidney disease
Vitamin K Antagonist			

Warfarin	• Stop 5 days prior to procedure • Check INR 1-2 days prior, and if INR greater than 1.5, give Vitamin K 1-2 mg PO • May consider bridge therapy with LMWH in high risk patients	• If procedure can be delayed 6-24 hours, Vitamin K 5-10 mg PO/IV • If procedure cannot be delayed or life threatening bleeding (ICH, etc.), give FFP or PCC prior to procedure. If PCC used give Vitamin K 5-10 mg IV to sustain anticoagulation reversal • NOTE: Memorial recommendations are now for fixed-dose PCC as noted below. Baseline INR not required; repeat dosing may be considered if INR remains elevated following initial dose • PCC Dosing for *life threatening* bleeding: - 1500 units unless indicated below - 2000 units for any patient with ▪ ICH diagnosis ▪ Body weight > 90 kg ▪ INR > 5 (if initial INR known)	• PCC should only be used for *life threatening bleeding (ICH, etc.)* or if urgent surgery needed and IV vitamin K or FFP not appropriate (surgery needed within 4-6 hours) *Caution: Risk of thrombosis when PCC used, particularly in patients with history of thrombosis.*
Drug Class	***Non-Urgent***	***Urgent - Bleeding or immediate surgery necessary***	***Comments***
Thrombin Inhibitor			
Pradaxa® (Dabigatran)	• Hold for 1-2 days prior to procedure for CrCl greater than 50 ml/min • Hold for 3-5 days prior to procedure for CrCl less than 50 ml/min	• Idarucizumab (Praxbind®): 5 grams IV x 1 dose Limited data to repeat 5gm dose 12-24 hrs after first dose IF bleeding persists in combination with elevated coagulation parameters • Hemodialysis	• Thrombin Time (preferred) or aPTT can be used to rule out substantial residual effect
Factor Xa Inhibitors			
Xarelto® (Rivaroxaban)	• Hold for at least 24 hours prior to procedure with normal renal function (>90 ml/min). Consider holding 2-3 days for patients with CrCl 30-90 ml/min.	• PCC Dosing— for major bleeding: ~~-50 units/kg for major bleeding. Max dose: 5000 units~~2000 units -2500 units for ICH (spontaneous or traumatic) -May repeat the same dose once within 6 hours of the initial dose if hemostasis is not achieved and/or maintained • Vitamin K not effective if given	• PT can be used to rule out substantial residual effect. Normal value may rule out clinically relevant residual anticoagulant effect. PT not intended to be used for dosage adjustment.
Eliquis® (Apixaban)	• Hold for at least 48 hrs prior to procedures with high risk of bleeding; 24 hrs prior to procedures with low risk of bleeding. Consider holding 2-3 days if CrCl < 60 ml/min regardless of procedure type or 3 or more days if CrCl < 50 ml/min.	• PCC Dosing for major bleeding: -2000 units -2500 units for ICH (spontaneous or traumatic) -May repeat the same dose once within 6 hours of the initial dose if hemostasis is not achieved and/or maintained ~~• PCC—50 units/kg for major bleeding. Max dose: 5000 units~~ • Vitamin K not effective if given	• PT can be used to rule out substantial residual effect. Normal value may rule out clinically relevant residual anticoagulant effect. PT not intended to be used for dosage adjustment.
Savaysa® (Edoxaban)	• Hold for at least 48 hrs prior to procedures with high risk of bleeding; 24 hrs prior to procedures with low risk of bleeding. Consider holding 1-2 days for CrCl > 50 ml/min and 3 or more days if CrCl ≤ 50 ml/min.	• No specific antidote/ Not dialyzable • PCC Dosing for major bleeding: -2000 units -2500 units for ICH (spontaneous or traumatic) -May repeat the same dose once within 6 hours of the initial dose if hemostasis is not achieved and/or maintained ~~• PCC—50 units/kg for major bleeding. Max dose: 5000 units~~ • Vitamin K not effective if given	• PT can be used to rule out substantial residual effect. Normal value may rule out clinically relevant residual anticoagulant effect. PT not intended to be used for dosage adjustment.
Coagulopathies Not Associated with Oral Anticoagulants			
Cardiopulmonary bypass associated coagulopathy (intra-op or post-op cardiac	• Vitamin K • FFP	• PCC – 1000 units and assess response - May repeat dose if clinically necessary • Vitamin K – consider in addition to PCC	PT can be used to rule out substantial residual effect. Normal value may rule out clinically relevant residual anticoagulant effect. PT not intended to be used for

surgery)			dosage adjustment.

*This is intended to provide the clinician with possible strategies for patient management and does not establish a fixed set of guidelines that preempt physician judgment. Consider risk of thrombosis when reversal agents utilized.

Key Contact(s): ~~Manager of Pharmacy~~Market Pharmacy Clinical Manager
Approved/Reviewed by: Director of Pharmacy & MM Chapter Leader; Nursing Professional Practice Council; Pharmacy / Nursing Committee
Related Document(s): High Alert Medications (MM-04502)
Joint Commission Standard: National Patient Safety Goal (NPSG) 03.05.01; Med Management: MM.01.01.01, MM.01.01.03
Date First Effective/Revisions: 3/09, (3/12) (5/13) (4/14)(2/15) (2/17) (11/18) (5/19) (2/22)

POLICY

Title: **BRADYCARDIA MANAGEMENT PROTOCOL**			
		Page **1** of **1**	
Policy Number:		Date Last reviewed/Revised: 2/22	Valid Until: 2/23
Campus: ☒ CHI Memorial Glenwood ☒ CHI Memorial Hixson ☒ CHI Memorial Georgia *Check all that apply*			
Department(s) Affected: All Departments		Review Period: every 3 years	

OUTCOME:
Standing orders to be used for immediate intervention in response to a symptomatic bradycardia patient event.

DEFINITIONS:
- Bradycardia: heart rate (HR) less than 60 beats per minute (bpm)
- Symptomatic bradycardia: HR < 40 AND one of the following: Systolic blood pressure <70, altered mental status, signs of shock, ischemic chest discomfort, OR acute heart failure

PERSONNEL: Medications to only be ordered by ACLS certified nurses

POLICY:
Standing orders for symptomatic bradycardia interventions may be initiated by a registered nurse that has ACLS certification in any inpatient or outpatient care area for any symptomatic bradycardia event, while awaiting physician contact. Physician should be notified ASAP.

PROCEDURE & TREATMENTS:
All RNs:
1. Maintain patent airway- assist breathing as necessary
2. Maintain oxygen SpO2 ≥ 92%
3. Contact Primary MD and call a RRT
4. Connect patient to crash cart with pacing pads and leads
5. Ensure IV access
6. Obtain 12 Lead EKG

ACLS Certified RN:
7. Identify heart rate is < 40 bpm
8. Identify patient is symptomatic: SBP < 70, altered mental status, signs of shock, ischemic chest discomfort, or acute heart failure
9. If HR < 40 and patient is symptomatic, administer Atropine 1 mg IVP. May repeat every 3-5 minutes to a max dose of 3 mg.
10. Atropine may be removed from the Pyxis Med Station via override function.
11. Physician must sign/authenticate the orders as soon as possible following enactment of the standing orders.
12. If at any time the patient's symptoms deteriorate and the patient experiences respiratory or cardiovascular compromise a CODE BLUE should be called for additional support.
13. Document medication administration appropriately in the electronic medical record.
14. Return unused items to Pyxis Med Station

Key Contact: Clinical Educator Critical Care
Approved/Reviewed by: Pharmacy & Therapeutics, Pharmacy Director; Code Blue Committee; NPPC, Chief Nursing Officer
Related Forms: AHA ACLS Guidelines, AHA Bradycardia Protocol
Date First Effective & Revision/Review dates: 2/22

DIAGNOSTIC RADIOGRAPHY

BODY PART	METHOD OF ADMINISTRATION	AMOUNT	PRODUCT
Enema Barium	rectal	2000 ml	EZ Paque
Enema Air Contrast	rectal	1900 ml	Liquid Polibar
Esophagram	Oral	355 ml	Liquid EZ Paque or EZ HD
Esophagram Gastro	Oral	120 ml	Gastrografin
Enema Gastro	Rectal	480 ml	Gastrografin (Water

BODY PART	METHOD OF ADMINISTRATION	AMOUNT	PRODUCT
			to 2000 ml)
Upper GI	Oral	135 ml	Liquid EZ Paque or EZ HD
Upper GI Gastro	Oral	120 ml	Gastrografin
Small Bowel	Oral	432 ml	Liquid EZ Paque
Small Bowel Gastro	Oral	240 ml	Gastrografin
Barium Pill	Oral	700 mg	EZ Disk Barium Sulfate Tablet
UGI- gas	Oral	4 g	EZ Gas II
Modified Barium Swallow	Oral	90 cc	Varibar Thin
Modified Barium Swallow	Oral	90 cc	Liquid EZ Paque
Modified Barium Swallow	Oral	90 cc	EZ HD
Modified Barium Swallow	Oral	1 Tsp	EZ Paste
IVP	IV	100 ml	Isovue 300
Myelogram Cervical	Intrathecal	10 ml	Isovue-M 300 ~~or Omnipaque 300~~
Myelogram Thoracic	Intrathecal	10 ml	Isovue-M 200 ~~or Omnipaque 300~~
Myelogram Lumbar	Intrathecal	10 ml	Isovue-M 200 ~~or Omnipaque 300~~
Venogram	IV	100 ml	Isovue 300 or 370
VCUG	Bladder	550 ml	Cystografin
Cystogram	Bladder	550 ml	Cystografin
Tube Placement	Intracavital	120 ml	Gastrografin
Arthrogram with MR	Intracapsular	10 ml	Isovue 300 and Multihance
Arthrogram without MR	Intracapsular	20 ml	Isovue 300
Port Patency	IV	20 ml	Isovue 300 or 370
HSG	Intrauterine	30 ml	Isovue 300
Lumbar Puncture	Intrathecal	Radiologist discretion	Isovue-M 200 ~~or Omnipaque 300~~

POLICY

Title: DRUG AND FOOD INTERACTION / EDUCATION			
		Page 1 of 2	
Policy Number: MM-05450		Date Last reviewed/Revised: 2/22	Valid Until: 2/25
Campus: ☒ CHI Memorial Glenwood ☒ CHI Memorial Hixson ☒ CHI Memorial Georgia *Check all that apply*			
Department(s) Affected: Nutrition Services, Nursing, Pharmacy		Review Period: Every 3 years	

OUTCOME:
Patient education will be provided to patients receiving medications determined to have potential drug-food interactions prior to discharge.

DEFINITION:

SIGNIFICANT DRUG-NUTRIENT INTERACTIONS: Those occurring with relative frequency or occurring less frequently, but with potentially grave consequences.

Medications determined by the Pharmacy and Therapeutics Committee to have clinically significant drug-nutrient interactions:

Generic Name	***Brand Names***
Warfarin	Coumadin, Jantoven
Metronidazole	Flagyl
Linezolid	Zyvox
Monoamine Oxidase *Inhibitors (MAOI's) such as:*	
Phenelizine	Nardil
Tranylcypromine	Parnate
Rasagiline	Azilect
Selegiline	Eldepryl, Zelapar

POLICY:
Patient and family education will be provided as outlined in *PATIENT EDUCATION PROGRAM (PC-07230)*.

1. Patients receiving the medications listed above will be provided information on clinically significant drug-nutrient interactions using approved resources as noted in *PATIENT EDUCATION PROGRAM (PC-07230)*.
    a. Nutrition clinical staff will provide patient education on Monoamine Oxidase Inhibitors and Linezolid (Zyvox)
    b. Nursing will provide patient education on Warfarin (Coumadin, Jantoven) and Metronidazole (Flagyl)
2. Inpatients receiving the medications listed above will be flagged daily in the Kardex file in Nutrition Services (Hixson and North Georgia) to prevent them from receiving foods that might result in a medication interaction. At the Memorial Glenwood campus this information will be entered into the CBORD System.
    a. Grapefruit juice is not available on the patient menu.
    b. Herbal supplements will be reviewed as part of the Registered Dietitian nutritional assessment as requested.
    c. Patients on Warfarin will be served no more than 1 serving of food HIGH in Vitamin K per day.
    d. Patients with a known reaction to aspartame (NutraSweet) will not be served products containing aspartame.
        i. Any patient with a known allergy or reaction to aspartame (trade name "Nutrasweet") should be so identified in order for Nutrition Services to make appropriate substitutions for products containing Nutrasweet.
        ii. The allergy should be entered into the "Allergy" section of the patient profile in the

EHR.

iii. Nutrition Services will not serve food products containing Nutrasweet, including but not limited to Equal, diet soft drinks and other diet beverages, diet jellies/syrups, and diet Jello.

e. Clinical dietitians and dietetic technicians will provide counseling to patients on other drug / food interactions as requested.

3. Inpatient education documentation is recorded on the Intervention Education: Interdisciplinary as outlined in *PATIENT EDUCATION PROGRAM (PC-07230)*

Key Contact(s): Food & Nutrition Services
Approved/Reviewed by: Nursing Professional Practice Council; Director of Pharmacy; Pharmacy & Therapeutics Committee; CNO
Joint Commission Standard: Medication Management (MM)
Date First Effective: 1/89 (2/04) (11/08) (1/13) (8/15) (7/18) (7/18) (3/19)(2/22)

POLICY

Title: SEDATIVES / HYPNOTICS FOR SLEEP			
		Page 1 of 2	
Policy Number: MM-05410		Date Last reviewed/Revised: 2/22	Valid Until: 2/25
Campus: ☒ CHI Memorial Glenwood ☒ CHI Memorial Hixson ☒ CHI Memorial Georgia *Check all that apply*			
Department(s) Affected: All Clinical Areas		Review Period: Every 3 years	

OUTCOME:
Sedatives/hypnotics for sleep in hospitalized patients will be used safely and in an effort to reduce the risk of fall and injury, especially in the elderly population of patients.

POLICY:

1. No sedative/hypnotic will be administered for sleep to any patient 65 or greater. **Exceptions are limited to the following:**
    a. Receiving as a home medication (note items 5.b, 6)

2. All sleep medications must have a written order by physician.
3. All sleep medication included on physician order sets must have a check box (☐) for physician to individually designate appropriateness for medication.
4. Zolpidem (Ambien®)
    a. The **maximum** Zolpidem (Ambien ®) dose is **5 mg** for any patient. This dose may not be repeated.
    b. Patients currently receiving as a home medication any dose greater than 5mg will only be provided 5mg maximum dosage.
5. Diphenhydramine (Benadryl®)
    a. **Only** patients currently receiving diphenhydramine as a home medication may continue to receive this medication as a sedative/hypnotic. Patients who do not take diphenhydramine as a home sedative/hypnotic will not be allowed to receive this medication as a sedative/hypnotic.
    b. The maximum Diphenhydramine (Benadryl®) dose is 25 mg for any patient. This dose may not be repeated. Patients currently receiving as a home medication any dose greater than 25 mg will only be provided 25 mg maximum dosage.
6. Approved formulary therapeutic substitutions are listed below and will be automatically interchanged as outlined:

Drug/ Dose Written	Therapeutic Interchange
Ramelteon (Rozerem®) 8 mg	Melatonin ® 3 mg
Zaleplon (Sonata®) 5 mg	Zolpidem (Ambien®) 5 mg
Zaleplon (Sonata®) 10 mg	Zolpidem (Ambien®) 5 mg
Triazolam (Halcion®) 0.25 mg	Zolpidem (Ambien®) 5 mg
Eszopiclone (Lunesta ®) 1 mg	Zolpidem (Ambien®) 2.5 mg
Eszopiclone (Lunesta®) 2 mg	Zolpidem (Ambien®) 5 mg
Eszopiclone (Lunesta®) 3 mg	Zolpidem (Ambien®) 5 mg
Flurazepam (Dalmane®) 15 mg or 30 mg	Zolpidem (Ambien®) 5 mg
Estazolam (Prosom®) 1 mg or 2 mg	Temazepam (Restoril®) 15 mg
Temazepam (Restoril®) 7.5 mg	Zolpidem (Ambien®) 5 mg
Temazepam (Restoril®) 15 mg or 30 mg	Temazepam (Restoril®) 15 mg
Zolpidem CR (Ambien CR®) 6.25 mg or 12.5	Zolpidem (Ambien®) 5 mg

Suvorexant (Belsomra) 10 mg	Zolpidem (Ambien®) 5 mg
Suvorexant (Belsomra) 20 mg	Zolpidem (Ambien®) 5 mg

Key Contact: Pharmacy Review Team
Reviewed by: Pharmacy & Therapeutics Committee, Nursing Professional Practice Council, Director of Pharmacy
Reference(s):

1. Young, Julie, S., Bourgeois, James, A., Hilty, Donald, M., & Hardin, Kimberly, A. (2009). Sleep in Hospitalized Medical Patients, Part 2: Behavioral and Pharmacological Management of sleep Disturbances. *Society of Hospital Medicine, 4(1), 50-59*
2. Nagel, Corey, L., Markie, Megan, B., Richards, Kathy, C., & Taylor, Jan, L. (2003). Sleep Promotion in Hospitalized Elders. *MEDSURG Nursing, 12(5), 270-290*
~~2~~3. Sateia MJ, Buysse DJ, Krystal AD, Neubauer DN, Heald JL. Clinical practice guideline for the pharmacologic treatment of chronic insomnia in adults: an American Academy of Sleep Medicine clinical practice guideline. J Clin Sleep Med. 2017;13(2):307–349.

Joint Commission Standard: Medication Management (MM)
Date First Effective/Revisions: 9/10, (1/12), (4/13) (2/16)(1/19) (2/22)

Title: RESPIRATORY DISTRESS PROTOCOL - PULMONARY SERVICES			
		Page **1** of **1**	
Policy Number: PUL-01928		Date Last reviewed/Revised: 2/224	Valid Until: 2/234
Campus: ☒ CHI Memorial Glenwood ☒ CHI Memorial Hixson ☒ CHI Memorial Georgia *Check all that apply*			
Department(s) Affected: Pulmonary Services		Review Period: every 3 years	

OUTCOME: To open and maintain obstructed airways.

PERSONNEL: Registered Respiratory Therapists.

POLICY:
When a patient is having respiratory distress hospital personnel may notify the Respiratory Therapist for that area stat to evaluate the patient.

PROCEDURE:
Respiratory Therapist will evaluate the patient and initiate treatment for wheezing and/or signs of bronchospasm, or stridor.

RESPIRATORY DISTRESS PROTOCOL:

1. Notify Respiratory Therapist STAT to evaluate patient.
2. Respiratory Therapist to initiate treatment(s) below based on the following patient assessment criteria:
   a. Oxygen:
      i. SpO2 or SaO2 < 90%
      ii. PaO2 < 60 mmHg
      iii. Respiratory Distress
      iv. AMI, Acute Coronary Syndrome, or Angina
      v. Altered mental status, or suspected stroke
   b. Bronchodilator:
      i. For wheezing and/or signs of bronchospasm administer Albuterol 2.5mg/NS via nebulizer.
      ii. For signs of stridor administer *Racemic Epinephrine 1.125mg (0.5ml 2.25%) via nebulizer, if no signs of cardiac rhythm disturbances.
   c. Arterial Blood Gas (ABG)
      i. SpO2 < 90%
      ii. Respiratory rate (f) > 30 breaths per minute
      iii. Altered mental status
      iv. Change in level of consciousness (LOC)
      v. Hemodynamic instability
3. Respiratory Therapist to notify physician/Licensed Independent Practitioner (LIP). Respiratory therapist to enter the order for the treatment(s) in the electronic health record (EHR) and sign the order in a manner which requires the physician/LIP to cosign the order.

Key Contact: Pulmonary Management Team
Approved/Reviewed by: Pulmonary Medical Director; P&T Committee
Date First Effective & Revision/Review dates: 1/12 (4/15) (1/16) (11/18) (04/19) (2/21) (2/22)

Nutrition Care Manual Updates: November 10, 2021

NCM® Diet Manual Updates

IDDSI Levels

- Level 4 Pureed (Green)
- Level 6 Soft and Bite-Sized (Blue) Definition
- Thickened Liquids

NCM Diet Manual Crosswalk

NCM Diet Order Terminology and Definitions

NCM® Condition Section Clinical Updates

Review new and updated clinical content featuring comprehensive nutritional management and evidence-based practice recommendations with our new consolidated format for the following conditions:

- Cirrhosis *(Updated)*
- Diverticular Conditions *(Updated)*
- Obesity & Overweight *(Updated)*

New and Improved NCM® Client Education Handouts

Now access 28 more vegetarian (lacto-ovo) and vegan menus for NCM® client education handouts:

- Bariatric Surgery Soft Diet Stage Nutrition Therapy
- Post-Surgery Meal Plan: 6 Months After Surgery and Beyond
- Tyramine-Restricted Nutrition Therapy
- Cholesterol-Lowering Nutrition Therapy
- Heart Failure Nutrition Therapy for the Undernourished
- Hearth Healthy – Reduced Sodium Nutrition Therapy
- Milk Allergy Nutrition Therapy
- Fish Allergy Nutrition Therapy
- Wheat Allergy Nutrition Therapy
- Esophageal Surgery Nutrition Therapy
- Lactose-Controlled Nutrition Therapy
- Difficulty Eating Nutrition Therapy
- Jaw Fracture Nutrition Therapy
- Pulmonary Nutrition Therapy

Expanded and updated NCM® client education handouts:

Cirrhosis

- Cirrhosis Nutrition Therapy *(Updated)*

Dysphagia

- IDDSI Level 4 Pureed (Green) Nutrition Therapy *(Updated)*

Normal Nutrition

- MyPlate for Meal Planning *(New)*

Weight Management

- High-Calorie, High-Protein Nutrition Therapy *(Updated; consolidated with Suggestions for Increasing Calories and Protein)*
- Setting Goals for Weight Management *(New)*
- Tips to Support Weight Loss *(Updated; previously Weight Loss Tips and consolidated with Weight Management Cooking Tips)*

Transgender Nutrition Handouts

- Nutrition education handouts developed and provided by the Saint Louis University Transgender Health Collaborative. These handouts provide nutrition guidance for transgender and gender diverse individuals.

Additional Client Education Handout Information

- Spanish translations will soon be available for the client education handouts included in this update along with Arabic, Chinese, and Vietnamese translations for most popular client education handouts.
- The redesigned PDF format will soon be available for the client education handouts included in this update.

NCM® Resources Updates

- Dietary Guidelines for Americans, 2020
- Academy Publications: A new section that lists Academy publications related to various conditions.

Relocated NCM® Content

- Kosher Dietary Guidelines was moved from the Normal Nutrition Client Education section to the Resources section under Cultural Foods Practices.

Retired NCM® Content

NCM Diet Manual

- National Dysphagia Diets

- National Dysphagia Diet Advanced
- National Dysphagia Diet Mechanically Altered
- National Dysphagia Diet Pureed

Condition Sections

The following condition sections were retired based on consensus among the members of the NCM® Board of Editors due to underutilization: Cancer Sites: Bladder, Brain, Carcinoid Tumors, Hepatobiliary/Gallbladder/Cholangiocarcinoma, Lung, Neuroendocrine Tumors, Ovarian, Prostate, Renal, Testicular, and Vaginal & Endometrial.

Client Education Handouts

Cardiovascular

- Coronary Artery Bypass Graft (CABG) Nutrition Therapy *(Consolidated; View Cardiac-TLC Nutrition Therapy)*

Renal

- Nephrotic Syndrome Exchange Meal Pattern
- Nephrotic Syndrome Nutrition Therapy

Dysphagia

- National Dysphagia Diet Advanced Nutrition Therapy
- National Dysphagia Diet Mechanically Altered Nutrition Therapy
- National Dysphagia Diet Pureed Nutrition Therapy

The following client education handouts were retired based on consensus among the members of the NCM® Board of Editors due to underutilization: 1,300 Calorie Sample Meal Plan, 1,700 Calorie Sample Meal Plan, 1,900 Calorie Sample Meal Plan, Amputations, Bulimia Nervosa Nutrition Therapy, Corn Allergy Nutrition Therapy, Corn Allergy Tips, Dentures Nutrition Therapy, Difficulty Eating Nutrition Therapy: Considerations for People with Diabetes, Dry Mouth, Egg Allergy Nutrition Therapy, Egg Allergy Tips, Exercise for HIV/AIDS Patients, Food Safety for HIV/AIDS, Galactose-Controlled Nutrition Therapy, Guidelines for High-Calorie Nutrition Therapy, Heart-Healthy Eating: Soy Protein, HIV/AIDS Managing Diarrhea, HIV/AIDS Managing Nausea and Vomiting, HIV/AIDS Medications and Food Interactions, HIV/AIDS Micronutrients (Vitamins and Minerals), Kitchen Tips, Milk Allergy Tips, Multiple Gestation Nutrition Therapy, Nephrotic Syndrome Exchange Meal Pattern, Nephrotic Syndrome Nutrition Therapy, Nutrition Recommendations After Oral Surgery, Nutrition Recommendations After Oral Surgery for People with Diabetes, Nutrition Recommendations for Orofacial Pain, Nutrition Recommendations to Reduce Side Effects of Medications, Nutrition Recommendations when Wearing Partial Dentures, Osteoarthritis Nutrition Therapy, Phenylketonuria (PKU) Tips, Pica Nutrition Therapy, Sickle Cell Disease Nutrition Therapy, Soy Allergy Nutrition Therapy, Soy Allergy Tips, Tree Nut Allergy Nutrition Therapy, Tree Nut Allergy Tips, and Wheat Allergy Tips.

NCM® Transition to IDDSI Framework

As of October 2021, International Dysphagia Diet Standardization Initiative (IDDSI) is the only texture-modified diet recognized by the Academy of Nutrition and Dietetics and the only texture-modified diet included in the NCM®. The National Dysphagia Diet (NDD) and associated resources have been removed from the NCM®.

NCM® Technological Updates

Due to functionality changes in Internet Explorer, some calculators and other functions in NCM® may not perform as expected. Consider converting to a supported browser for optimal performance. Supported browsers include Microsoft Edge, Mozilla Firefox, Apple Safari, and Google Chrome.

We hope you enjoy the 2021 Nutrition Care Manual® Updates!

Sincerely,
The NCM® Team