Medical Directive

Physician Assistant Patient Care Directive, General Surgery

Authorized To
A Physician Assistant in the Department of General Surgery at _____ with the following qualifications:
Graduation from a fully accredited Physician Assistant Training Program in Canada or the United States
A member in good standing of the Canadian Association of Physician Assistants
Certified by the Physician Assistant Certification Council of Canada or the National Commission on Certification of Physician Assistants
Demonstrated the knowledge, skill and judgment to implement this medical directive during the evaluation period as documented within the Performance Readiness tool (attached).

Description of Procedure

The Physician Assistant (PA) may implement the medical directive for initiating the order for a diagnostic test or intervention, and initiating consults for patients under the care of an attending in the department of General Surgery at _____ Hospital. The PA will document the name of the attending physician on any consult initiated through this medical directive (in the doctor's orders).

The Physician Assistant may implement this medical directive for initiating a physician order for medications in the table below according to the specified indications. The Physician Assistant will work as part of a team in close consultation with the Supervising Physicians, the Residents and the Pharmacists for regarding diagnostics tests, interventions and medications.

Indications

The Physician Assistant may implement the directive for a patient admitted to _____ hospital under the care of an attending physician who has signed this directive, as the patient's condition warrants initiation or alteration of a medication listed in the table below, secondary to:

- Management of post-operative recovery or complication.
- Management of a pre-existing condition

The PA may initiate diagnostic tests, interventions, and consults in accordance with the identified indications listed in the attached tables. The Physician Assistant will discuss assessments, interventions/diagnostic imaging and progress of patients daily with the Most Responsible Physician, the Attending covering their patients or their delegate which may be the Senior Resident assigned to their service.

Medications will be ordered in accordance with hospital policy and subject to restrictions of the specific unit of the hospital where the patient is located.

Contraindications

Absolute Contraindications:

1) The Physician Assistant will not initiate the directive for any medication if there is hypersensitivity or allergy as reported by the patient, family or noted by an attending health care professional or existing in the electronic patient record (EPR). Any new hypersensitivity or allergic reaction will be documented in EPR and discussed with the Supervising Physician. The medication will be put on hold until clarified.
2) The Physician Assistant will not order narcotics or benzodiazepines.

Special Considerations:

1) The Physician Assistant will review the patient's medications in consultation with the Pharmacist if the patient is known to be pregnant.
2) Patients with renal or hepatic impairment will require certain medications be adjusted accordingly as noted in the table below in consultation with the Pharmacist.
3) Medications times may be changed to standard medication administration times while the patient is in hospital.
4) Serum drug levels will be monitored for medications with a narrow therapeutic range and risk of toxicity. Interpretation and dose adjustments will be performed after reviewing the level with the Pharmacist.

For detailed indications and contraindications, refer to Medications and/or Diagnostic Tests/Interventions and/or Consultations tables below.

The medical directive includes the delegation of a controlled act/procedure:

Yes X☐ No ☐ If yes, which procedure(s)?

The following Delegated Controlled Acts are part of this Medical Directive:

Putting an instrument beyond the urethra (order for a catheter)
Performing a procedure below the dermis (order for ABG, blood cultures, venous and arterial lines, wound assessment, point-of-care testing of glucose)
Administering a substance by inhalation (administer or order administration of oxygen)

Documentation

Implementation of an order per the Medical Directive will be documented in the patient record or entered in the electronic patient record.

Authorizing Physician(s)

Attending physicians who have signed the approval form attached.

Resources/References

AARC Clinical Practice Guideline: Incentive Spirometry: 2011, Respiratory Care 2011 October 56 (10):1600-1604.

Bickley, Lynn S. and Peter G. Szilagyi. Bates' Guide to Physical Exam and History Taking. Philadelphia, Wolters Kluwer/Lippincott Williams and Wilkins, 2013

2012 Canadian Association of Radiologists (CAR) Referral Guidelines: http://www.car.ca/en/standards-guidelines/guidelines.aspx

CAR Medical Imaging Primer with a Focus on XRay Usage and Safety http://www.car.ca/uploads/standards%20guidelines/20130128_en_guide_radiation_primer.pdf

CAR Prevention of Contrast-induced Nephropathy
http://www.car.ca/uploads/standards%20guidelines/20110617_en_prevention_cin.pdf

College of Physicians and Surgeons of Ontario. Policy Statement #5-12, Delegation of Controlled Acts. Dialogue. Issue 3, 2012.
http://www.cpso.on.ca/policies-publications/policy/delegation-of-controlled-acts

Health Canada Notice on Gadolinium-based Contrast Agents:
http://healthycanadians.gc.ca/recall-alert-rappel-avis/hc-sc/2013/36711a-eng.php

Mount Sinai Hospital/University Health Network/Women's College Hospital
Department of Medical Imaging Consent for Medical Imaging Procedures Policy;
http://documents.uhn.ca/sites/uhn/policies/Departmental_Manuals/Medical_Imaging/Patient_Care/16.30.003.pdf

Mount Sinai Hospital/University Health Network/Women's College Hospital: Department of Medical Imaging – IV Contrast Media for MRI Procedures
http://documents.uhn.ca/sites/uhn/Policies/Departmental_Manuals/Medical_Imaging/Patient_Care/16.30.004.pdf

Mount Sinai Hospital/University Health Network/Women's College Hospital: Department of Medical Imaging – Pregnant Patients in MRI
http://documents.uhn.ca/sites/uhn/Policies/Departmental_Manuals/Medical_Imaging/Patient_Care/16.30.007.pdf

Regulated Health Professions Act, 1991. College of Physicians and Surgeons (2004). Policy #4-03: Delegation of Controlled Acts. Toronto, Ontario.

RN RPN Urinary System Management - UHN Medical Directive
http://documents.uhn.ca/sites/uhn/Clinical_Operations_Committee/Medical_Directives/Nursing/ALL_Registered_Nurses(RN)/UrinarySystemManagement.pdf and UHN Urinary Catherization Algorithm

UHN Guidelines for Venous Thromboembolism Prophylaxis
http://documents.uhn.ca/sites/uhn/Policies/Policy_Attachments/3.30.028_attach1.pdf

UHN Infection Prevention and Control - MRSA
http://documents.uhn.ca/sites/uhn/policies/Infection_Control/Infectious_Diseases/4.60.015-doc.pdf

UHN Policy and Procedural Manual Clinical – Device and Site Selection, Placement and Removal http://documents.uhn.ca/sites/uhn/Policies/Clinical/Vascular_Access/3.60.002-doc.pdf

UHN Policy and Procedural Manual, Clinical – Gastric Tubes, 3.30.026

UHN Policy and Procedural Manual, Respiratory Therapy, Blood and Gas Sampling Analysis, Arterial Line
Insertion
http://documents.uhn.ca/sites/uhn/Policies/respiratory_therapy_corporate_manual/blood__and__gas_sampling-analysis/uhnflv023181-doc.pdf

UHN Policy and Procedure Manual Clinical – Vascular Access – Site Care and Maintenance
http://documents.uhn.ca/sites/uhn/Policies/clinical/Vascular_Access/uhnprod005643-doc.pdf

UHN X-ray Safety and Pregnant Patients policy: http://documents.uhn.ca/sites/uhn/policies/X-ray_Safety/Patient_Safety/13.50.002.pdf

Medication References:
Hospital Formulary

Compendium of Pharmaceuticals and Specialties – current year to be consulted

Lexi-comp – updated on-line as accessed through hospital subscription

Pharmacist

Hospital Policy:

Policy on Delegation to a Physician Assistant:
College of Physicians and Surgeons of Ontario. Policy Statement #5-12, Delegation of Controlled Acts. Dialogue. Issue 3, 2012.
http://www.cpso.on.ca/policies-publications/policy/delegation-of-controlled-acts

Regulated Health Professions Act, 1991. College of Physicians and Surgeons (2004). Policy #4-03: Delegation of Controlled Acts. Toronto, ON.

Textbooks:

Reudy, Marshall. (2011). *Principles and Protocols*, 5th edition. Philadelphia, PA: Elsevier, Saunders

Contact Person:

Diagnostic Tests/Interventions

Diagnostic Test/Intervention	Indications	Absolute Contraindications	Special Considerations (Including contraindications)
Activity Orders	As appropriate for diagnosis and treatment		To be discussed with MRP /Senior Resident when patient has known or suspected bone cancer
Albumin, Protein	Assessment of nutritional status, and to monitor drug levels influenced by protein binding		
Alternate Level of Care Documentation	Ordered on patients at the point in time when they no longer require acute care services but are waiting for alternate level of care.		
Arterial Blood Gases (order)	Home oxygen assessment; evaluation of ventilatory and oxygenation status; oxygen saturation less than 92%; unexplained dyspnea, cyanosis or restlessness		Negative Modified Allen Test, if patient is receiving thrombolytic therapy (warfarin, Coumadin® or heparin), INR greater than 1.1 sec, PTT greater than 37 sec, platelet count less than 20,000. **Note**: Arterial punctures should not be performed through a lesion or through or distal to a surgical shunt (e.g., as in a dialysis patient). If there is evidence of infection or peripheral vascular disease involving selected limb, an alternative site should be selected
B12, ferritin, folate, total iron saturation (TIS)	Assessment of anemia		
Blood Pressure Parameters	As indicated to maintain perfusion or limit hypertension		
Bone mineral density, dual energy x-ray absorptiometry (DEXA) scan	Assessment and management of osteoporosis and osteopenia		Nuclear medicine study, or CT contrast within past 10 to 14 days may interfere with results; consult with Radiologist in the above situations
Bone Scan	Assessment of suspected metastases		Pregnancy, breastfeeding; Recent nuclear medicine tests (e.g. myocardial perfusion) or thyroid ablation with iodine may have left residuals that

Diagnostic Test/Intervention	Indications	Absolute Contraindications	Special Considerations (Including contraindications)
			interfere with imaging; consult with radiologist in the above situations
CBC	Assessment of hemoglobin, platelets, query infection; assessment of hydration; previous abnormal result		
PA may perform complete history and physical exam; focused physical exam may include insertion of nasal speculum into nares; insertion of otoscope into external auditory canal; fundoscopy; and insertion of finger beyond the anal verge	Focused exam for assessment of patient; spinal exam to include examination of rectal tone where clinically indicated to assess acute changes in post-operative spinal surgery patient, and to classify or follow spinal injury	Patient refusal of physical exam in whole or in part; nasal speculum not to be used in post-operative transphenoidal surgery patient	
Computed Tomography (CT) Scan: Abdomen and/or Pelvis (with/without contrast)	Assessment of acute abdominal pain, suspected bowel obstruction or ileus not confirmed by x-ray; known or suspected masses or fluid collections; suspected infections or metastases	Pregnancy; Peritoneal dialysis patients need dialysate drained prior to CT	Screen for contrast pre-cautions: history of asthma, diabetes on medical therapy with reduced renal function; renal insufficiency; dehydration; contrast given in previous 72 hours; previous contrast reaction; multiple allergies; pregnancy, multiple myeloma, Myasthenia Gravis, metformin use. Patients with renal insufficiency should have metformin held for 48 h post IV contrast medium administration to avoid potential toxic accumulation of metformin should decreased renal excretion occur; consult with Radiologist in the above situations
Computed Tomography (CT) Scan: Chest (with/without contrast medium)	Assessment of suspected PE; assessment of vascular system; suspected lung cancer or metastases	Pregnancy	Screen for contrast dye pre-cautions: history of asthma, diabetes on medical therapy with reduced renal function; renal insufficiency; dehydration; contrast dye given in previous 72 hours; previous contrast reaction; multiple allergies; pregnancy, multiple myeloma, Myasthenia Gravis, metformin use.

Diagnostic Test/Intervention	Indications	Absolute Contraindications	Special Considerations (Including contraindications)
			Patients with renal insufficiency should have metformin held for 48 h post IV contrast medium administration to avoid potential toxic accumulation of metformin should decreased renal excretion occur; consult with Radiologist in the above situations
C reactive protein (CRP)	Assessment of inflammation/infection		
Creatine Kinase (CK)/Total CK/Troponin I	Assessment of chest pain, pre-op work up, ECG abnormalities		
Creatinine, Urea, eGFR	Assessment and management of renal and fluid status, and drug clearance		
Culture and Sensitivity and gram stain (urine, sputum, stool, blood, wounds, CSF); CSF glucose, cell count and differential, protein	Assessment of suspected infection		
Diet/Nutrition	As appropriate for diagnosis and/or treatment, and in consultation with speech therapist or dietician; Order to start feeds by nasogastric or orogastric tube once Physician has confirmed placement by chest x-ray	Patient NPO pre-operative, for vomiting or suspected ileus	In accordance with UHN policy Gastric Tubes 3.30.026 Note that revision of this policy is pending
Drug Levels	Assessment of medication levels to ensure therapeutic ranges or for toxicology screen if toxic ingestion is suspected		
ECG (12-Lead or 15-Lead)	Assessment of cardiac function		
Echocardiogram 2D	Assessment of cardiac function in patients with compromised cardiac status		Consult Cardiology if echocardiogram is required
EEG	Assessment of potential or witnessed seizures		Consult Neurology if EEG is ordered

Diagnostic Test/Intervention	Indications	Absolute Contraindications	Special Considerations (Including contraindications)
Electrolytes & Trace Elements (serum and urine)	Assessment and monitoring of electrolyte levels, nutritional status, and reassessment following replacement therapy		
Endocrine Workup (including ACTH, cortisol, FSH, GH, LH, prolactin, TSH, Free T3 and T4, testosterone, IGF-1)	Assessment of endocrine function		
Glucose (serum), Point of Care Testing, glucose monitoring	Assessment and monitoring of glucose levels		
Hemoglobin A1C	Assessment of glycemic control in diabetic patients		
Human Chorionic Gonadotropin (HCG blood test)	To confirm or rule out pregnancy		
Intake and Output Parameters	Assessment and management of fluid balance		
Lactate level	Assessment of suspected infection/sepsis		
Lipid Profile (LDL, HDL, cholesterol, triglycerides)	Assessment of lipid profile, risk stratification		
Liver Function tests (ALP, AST, ALT, GGT, Total bilirubin, bicarbonate ion level)	Assessment of suspected hepatic toxicity, drug clearance, suspected ETOH abuse, ascites or jaundice		
MRSA swab	Assessment as per UHN Infectious Diseases protocol, and to determine efficacy of treatment		
Oxygen (DCA) PA may administer or order the administration of oxygen	Initiation of oxygen therapy for treatment of hypoxia to maintain oxygen saturation greater than 92%		Caution should be used when administering oxygen to patients with COPD; consult Respiratory Therapy, Critical Care Response Team or call ICU team /Code Blue as indicated for respiratory decompensation
Pulmonary Function Tests	To obtain information about breathing patterns; for the assessment and management of lung		

Diagnostic Test/Intervention	Indications	Absolute Contraindications	Special Considerations (Including contraindications)
	disease		
aPTT, PT/INR/D-dimers	Assessment of pre-op and pre-procedure status, patients with suspected coagulopathies, and monitoring of anti-coagulant drug therapy		
Rectal Tube	Insertion ordered for patients with ongoing diarrhea to prevent skin breakdown and transmission of infection		C-difficile toxin to be ruled-out in patient with diarrhea
Sequential Compression Devices (SCDs), intermittent pneumatic compression devices, TEDs (thromboembolic deterrent stockings)	Thromboprophylaxis for a patient at high risk of bleeding		
Stool for C. difficile toxin	Assessment of frequent, loose stools of unknown etiology		
Stool for occult blood	Assessment of suspected blood loss from GI tract		
Type & Cross-match	Pre-op preparation, patients with low hemoglobin		
Ultrasound (bladder scanner)	Assessment of suspected urinary retention		
Ultrasound (abdominal, pelvic, thoracic)	Assessment of unexplained abdominal pain or distention; ascites or suspected pleural fluid		
Urinalysis	Assessment of hematuria or suspected UTI		
Urinary catheterization (in-dwelling)	Hemodynamically unstable patient requiring fluid resuscitation; critically ill patient requiring accurate monitoring of urine output; to assist in healing of sacral or perineal ulcers in incontinent patient; patient requiring strict prolonged immobilization	Urethral trauma	
Urinary catheterization (intermittent)	No urine output for 4 hours, and patient is either unable to void or has post-void	Urethral trauma	Refer to UHN catheterization algorithm

Diagnostic Test/Intervention	Indications	Absolute Contraindications	Special Considerations (Including contraindications)
	residual of at least 150 mL as measured by bladder scan		
Urinary catheterization (in-dwelling) removal	In accordance with UHN Medical Directive Urinary System Management (see resource) – all urinary catheters will be removed unless contraindicated	Urinary catheters will not be removed by the PA if: a Urologist is already involved in case, recent urologic surgery, catheter placed by urology, difficult catheterization, due to known or suspected urinary tract obstruction, neurogenic bladder dysfunction, patient incontinent of urine AND has one of the following: a) skin breakdown, Stage III in the sacral/groin region b) strict in/out monitoring required c) femoral lines or incisions including IABP, d) sedation/paralytics, decreased level of consciousness (SAS less than 3)/CVA that impairs movement e) 24h urine collection needed or in progress, 4. Epidural catheter or spinal drain 5. Oost-operative care of patient up to 48 h 6. Bladder irrigation in progress, 7. comfort care for End of Life patient, 8. chronic long term in-dwelling catheter in situ	
Vascular Access device discontinuation: insert or discontinue peripheral IV or arterial line	Insertion: for fluid medication administration; arterial line for blood pressure monitoring Discontinuation: IV or arterial line no longer required; extravasation; suspected line infection In accordance with Vascular Access policy		
V/Q scan	Assessment of acute unexplained dyspnea, abrupt deterioration in oxygen saturation, and to		pregnancy

Diagnostic Test/Intervention	Indications	Absolute Contraindications	Special Considerations (Including contraindications)
	rule out pulmonary embolus		
Vital Signs, Neurological Vital Signs, Spinal Cord Testing, Cardiac Monitoring	Initiation, discontinuation, and changes to parameters as appropriate to patient's condition		
Wound Care – PA may perform or order dressing changes, assess depth of wound, and/or obtain wound culture	Removal/replacement of standard post-operative dressings during daily assessment of patient; deep wound culture if infection suspected		Advanced Wound Care requires consult
X-ray: Abdomen (3 views or flat plate)	Assessment of distended abdomen, to rule out ileus or obstruction, undiagnosed abdominal pain		pregnancy
X-ray: Chest	Assessment of atelectasis, pleural effusion, pneumothorax, dyspnea, respiratory distress, chest pain, suspected infection, thoracic-lumbar-sacral orthotic, NG tube placement, orogastric tube placement, post-chest tube insertion or removal, or pre-op assessment		pregnancy
X-ray: Extremity/Joint/Pelvis	Assessment of suspected fractures or dislocation, or follow-up of known injury		pregnancy
X-ray: Head & Spine	Assessment of suspected fractures or dislocation, following procedures (such as halo application or surgery), and follow-up of known injury		pregnancy
X-ray, Skeletal survey	Suspected metastases		pregnancy

Consultations

Consultation	Indications	Special Considerations
Anesthesia/Acute & Chronic Pain Services	Pre-op assessment & determination of surgical risk, and complex airway issues Assessment and management of acute or chronic pain	
Cardiology	Assessment and management of patients myocardial dysfunction, ischemia/infarction	
Community Care Access (Home Care)	Assessment and planning of discharge needs	
Dermatology	Assessment and management of complex dermatological issues	
Diabetes Educator	Assessment and management of newly diagnosed or previously unmanaged diabetic patients	
Dietician	Assessment and management of nutritional status	
Ear, Nose & Throat (ENT)	Assessment and management of complex airway issues	
Endocrine	Assessment and management of patients with diabetes, chronic electrolyte disturbances, and hormonal imbalances	
Gastroenterology	Assessment and management of complex gastro-intestinal issues	
General Surgery	Assessment and management of general surgical issues	
Hematology	Assessment and management of coagulation disorders	
Hyperbaric Treatment	Assessment and management of wound infections	
Infectious Diseases	Assessment and management of complex infections	
Internal Medicine	Assessment and management of medical conditions	
Nephrology	Assessment and management of acute and chronic renal disorders	
Neurology/Movement Disorders Program	Assessment and management of neurological issues (non-neurosurgical)	
Obstetrics & Gynecology	Assessment and management of gynecological issues	
Occupational Therapy	Assessment and management of cognitive deficits, assistance with ADL's & discharge planning	
Oncology (Medical & Radiation)	Assessment and management of oncological issues	

Consultation	Indications	Special Considerations
Ophthalmology & Neuro-ophthalmology	Assessment of visual fields and disorders	Visual disturbance secondary to neurosurgical issues referred to neuro-ophthalmology
Orthopedics	Assessment and management of orthopedic issues	
Palliative Care Team	Assessment and management of palliative patients	
Pharmacy	Assessment and management of pharmacological treatment	
Physiotherapy	Assessment and management of impaired mobility, and chest physiotherapy	Includes both inpatient and ambulatory clinic area consultation and referrals
Plastic Surgery	Assessment and management of complex wounds	
Psychiatry & Neuro-Psychiatry & Neuro-Psychology	Assessment and management of acute or chronic psychiatric disorders and/or cognitive impairment	
Regional Geriatric Program	Assessment and management of elderly patients with multiple and complex medical/cognitive/social problems	
Respiratory Therapy	Assessment and management of acute and chronic respiratory issues	
Respirology	Assessment and management of complex respiratory issues	
Rheumatology	Assessment and management of complex inflammatory processes	
Social work	Assessment and planning of discharge needs; Assistance with coping (patient or family)	
Speech Language Pathology	Assessment and management of impaired swallowing and communication	
Stroke Team	Assessment and management of neurological deficits related to stroke (non-neurosurgical)	
Trillium Gift of Life Network	Assessment of appropriateness for organ donation and initiation of discussions with the family	Inform attending neurosurgeon or senior residents
Urology	Assessment and management of urological complications	
Vascular Surgery	Assessment and management of complications related to complex vascular issues	
Wound Care/Ostomy Nurse	Assessment and management of wounds and skin care in complex patients	

Medications

Section A

Drug Classification	Drug Name & Dosage Range	Indications	Absolute Contraindications	Special Considerations (Including Contraindications)
analgesics	acetaminophen 325 to 650 mg PO or enteral tube q 4h as needed acetaminophen 320 to 640 mg elixir PO or enteral tube q4h as needed acetaminophen 320 to 640 mg elixir PO or enteral tube q6h as needed acetaminophen 325 or 650 mg PR q4h as needed Maximum acetaminophen dose not to exceed 4 grams in 24 hours	Management of mild to moderate acute or chronic pain; antipyretic adjunct with opioid analgesic	elevated liver enzymes, hepatic failure	Determine cause of fever (Total dose of Acetaminophen from all sources (for example, Percocet, Tylenol No. 1-3) is not to exceed 4 g in 24 hours; lower maximums of 3 g per day may also be considered in selected patients).
antacid	calcium carbonate 500 to 1,000 mg PO or enteral tube four times per day as needed	Indigestion, reflux	hypercalcemia; hypophosphatemia; renal calculi; patient with suspected digoxin toxicity	
antiemetics	dimenhydrinate 25 mg to 50 mg PO or enteral tube or IM q4h as needed dimenhydrinate 25 to 50 mg in 50 mL normal saline or D5W or 2/3 + 1/3 or Ringer's Lactate IV-int, infuse over 15 to 30 minutes q 4h as needed for nausea Max dimenhydrinate 400 mg in 24h	Nausea & vomiting		Avoid in geriatric patients; Will have increased sedation effect if patient is taking phenytoin, carbamazepine or valproic acid; may mask signs of ototoxicity; *CNS depression: worsening of Glasgow Coma Score* Worsening of dementia symptoms May increase effects of opioid and barbiturates; monitor for anti-cholinergic side effects (confusion, constipation)
Anti-emetic, selective 5-HT3 receptor antagonist	ondansetron (Zofran) 4 mg IV-int, dilute in 50 to 100 mL normal saline, or D5W, or 2/3 + 1/3, once or q8h as needed	post-operative nausea and vomiting	5-HT3 receptor antagonist allergy. Avoid use in pregnancy; or with QTc prolongation or cardiac conduction	Extensive hepatic metabolism; antagonizes 5-HT3 receptors, risk of serotonin syndrome; may alter serum levels of other medications; causes QTc prolongation approximately 1.5

Drug Classification	Drug Name & Dosage Range	Indications	Absolute Contraindications	Special Considerations (Including Contraindications)
	Maximum 16 mg in 24 hours		abnormalities	h after dose given
antihistamine	diphenhydramine 25 to 50 mg PO or enteral tube q4 to 6h as needed diphenhydramine 25 to 50 mg IV-int, dilute in 25 to 50 mL normal saline or D5W or 2/3 + 1/3, Ringer's lactate over 10 to 30 minutes	Prevention or treatment of urticarial, histamine-related drug reaction; anaphylaxis (concomitant use with epinephrine); pre-contrast if previous contrast reaction per UHN policy	acute asthma; breastfeeding	CNS depressant, may enhance the effect of other CNS depressants; caution in elderly due to sedative effect
Antiplatelet; Non-steroidal anti-inflammatory	acetylsalicylic acid (ASA) 81 mg PO or enteral tube or 325 mg PO/enteral tube daily	acute myocardial infarction; atrial fibrillation with low risk of embolism and not on anticoagulants (CHADS 0); Secondary prevention of cardiovascular or cerebrovascular events	hemorrhage; age less than 16	Discuss patient clinical status with Senior Resident/Supervising Physician if clinical suspicion of acute coronary syndrome; watch for bleeding/stroke
Anxiolytics, hypnotic	zopiclone 3.75 mg PO or enteral tube at bedtime as needed	Sleep aid	Pregnancy, breastfeeding; Severe hepatic insufficiency; severe respiratory depression; myasthenia gravis	similar drug profile to benzodiazepines
bowel management stool softener	docusate sodium 100 mg capsule or syrup PO bid	Stool softener; management of post -op constipation; to minimize chance of Valsalva/straining	acute abdominal pain, ileus	
	sennosides 2 tablets PO or 10 mL enteral tube daily at bedtime	functional constipation, either chronic or post-op (including opioid - induced)	impaction; intestinal obstruction not due to constipation; acute intestinal inflammation (e.g., Crohn's disease); ulcerative colitis; appendicitis; abdominal pain of unknown origin; pregnancy	
anti-emetic, prokinetic	metoclopramide 5 mg in 25 to 100ml IV-int infuse over 15 to 30 minutes daily to 4 times daily	Enteral feed-associated or post-operative nausea and vomiting	Avoid in Parkinson disease patients as may increase extra pyramidal symptoms (EPS)	Can cause neuroleptic malignant syndrome, parkinsonism, increased EPS and irreversible tardive dyskinesia; avoid long-term

Drug Classification	Drug Name & Dosage Range	Indications	Absolute Contraindications	Special Considerations (Including Contraindications)
	metoclopramide 10 mg PO or enteral tube up to 4 times daily as needed			use; drowsiness, restlessness, insomnia and depression are common side effects;
dopamine- antagonist, prokinetic	domperidone 5 mg PO or enteral tube four times daily at meals and at bedtime	enteral feed-associated or post-op nausea and vomiting	Prolactinoma, elevated prolactin levels; GI hemorrhage; mechanical obstruction or perforation; concomitant use of ketoconazole; prolonged QTc	Initiate at lowest possible dose; may cause severe arrhythmias and sudden cardiac death; effect in pregnancy not known. Monitor QT intervals and use with caution with other drugs that may prolong QTc - interval
Laxative, antacid, magnesium salt	magnesium hydroxide and aromatic cascara Non-spine: 15 mL suspension PO or enteral tube at bedtime as needed Spine: 15 mL suspension PO or enteral tube daily at bedtime	management of constipation	Impaired renal function Rectal bleeding Impaction Hypermagnesemia Cascara is an emmenogogue and abortifacient – do not use in pregnancy Avoid use in myasthenia gravis and neuromuscular disease; avoid use in renal disease	Avoid use at the same time with iron supplements, quinolone and tetracycline antibiotics such as ciprofloxacin and others (give interval between two drugs): monitor K, Mg
Laxative, stimulant	bisacodyl 5 to 15 mg PO daily in morning if no bowel movement previous day bisacodyl 10 mg suppository PR daily in morning if no bowel movement previous day	treatment of constipation	severe abdominal pain rectal bleeding rectal fistula appendicitis	Stimulates peristalsis

Drug Classification	Drug Name & Dosage Range	Indications	Absolute Contraindications	Special Considerations (Including Contraindications)
laxative, bowel evacuant	sodium phosphate and biphosphate (Fleet Enema) 130 mL enema PR as needed if no bowel movement previous 3 days	management of constipation	eGFR less than 30ml/min; Appendicitis, ileus, impaction; ulcerative colitis, impaired renal function, rectal bleeding, rectal fistula, uncontrolled hypertension; hypernatremia, hyperphosphate, hypocalcemia	Consult MD if patient has impaired renal function, congestive heart failure, uncontrolled hypertension -can give Fleet with no phosphate electrolyte imbalances likely, monitor electrolytes
Enema – mineral oil	Fleet enema mineral oil 130 mL PR daily as needed	Management of constipation		
Osmotic laxative, ammonia detoxicant	lactulose 10 to 20 g solution PO or enteral tube once daily to bid as needed	constipation	Suspected or confirmed ileus, bowel obstruction	Doses to remove ammonia to prevent portal systemic encephalopathy are higher and more frequent; watch for dehydration, electrolyte imbalance; solution contains galactose and lactose, observe blood sugar levels in diabetes
Osmotic laxative	Polyethylene glycol (Lax-a-day) 17g PO daily as needed	Constipation	Bowel obstruction, appendicitis	
Bronchodilator beta-2 adrenergic agonists	salbutamol 100 micrograms/dose metered dose inhaler, 1 to 4 puffs for acute bronchospasm; maintenance dose 1 to 2 puffs four times daily, as needed acute severe asthma: 4 to 8 puffs q 20 minutes (may decrease frequency up to 4 h) THEN q 1 to 4 h as needed	Bronchospasm; asthma	Pregnancy/breastfeeding	Heart rate monitoring;
diuretics, loop; antihypertensive	furosemide 20 mg PO or IV-int dilute in 50 to 100 mL once or daily or q12h	pulmonary edema, heart failure, hypervolemia after blood transfusion	Hypotension, hypokalemia	higher doses may be required for patient on regular furosemide pre-hospital; monitor for electrolyte imbalances, especially hypokalemia, serum creatinine, as well as fluid status
diuretics, thiazide	hydrochlorothiazide 12.5 to 25 mg PO one dose or once daily	pulmonary edema, congestive heart failure, volume overloaded patient	hypotension; anuria; breastfeediing	Monitor potassium

Drug Classification	Drug Name & Dosage Range	Indications	Absolute Contraindications	Special Considerations (Including Contraindications)
electrolyte replacement preparations	calcium chloride 1 g (10 mL of 10% concentration) diluted in in 100 to 250 mL NS IV-int one dose infused over 30 mins	For corrected serum calcium less than 2.2 mmol/L	Pregnancy; do not give at same time as ceftriaxone	Ensure other electrolytes are also normalized
	calcium gluconate 1 g (10 mL of 10% concentration) diluted in in 100 to 250 mL NS IV-int one dose infused over 30 mins	for corrected serum calcium less than 2.2 mmol/L	ventricular fibrillation; do not give at same time as ceftriaxone	
	magnesium glucoheptonate 15 mL PO or enteral tube tid for 3 days then reassess	For serum magnesium less than 0.8 mmol/L (less than 1.0 for cardiac patients)		caution in heart block, neuromuscular disease, renal impairment. Monitor Mg, diarrhea.
	magnesium sulphate 1 to 2 g IV-int in 100 mL D5W or normal saline at a rate of 1 g per hour for one dose	serum magnesium less than 0.8 mmol/L; (less than 1.0 for cardiac patients)	pregnancy; breastfeeding	caution if hypotensive as may decrease blood pressure; caution if heart block or myocardial infarction; repeat serum magnesium level in 2 to 6 hours post treatment. Avoid concomitant use with iron supplements, quinolone and tetracycline antibiotics such as ciprofloxacin and others; decrease dose for renal insufficiency
	Potassium chloride slow release tablet (Slow K 8 mEq per tab) 1 to 2 tabs PO one to two doses	Serum potassium less than 3.5 mmol/L	hyperkalemia; pregnancy/breastfeeding	Monitor serum potassium
	Potassium chloride sustained release (K-Dur 20mEq per tab) 1 to 2 tabs PO one to two doses	Serum potassium less than 3.5 mmol/L	hyperkalemia; pregnancy/breastfeeding	Monitor serum potassium
	Potassium chloride oral liquid 20 mEq one to two doses	serum potassium less than 3.5 mmol/L (less than 4.0 for cardiac patients)	hyperkalemia; pregnancy/breastfeeding	
	potassium phosphate 15 mmol IV in 415 mL NS or D5W for peripheral infusion ONLY one dose	serum phosphate less than 0.8 mmol/L	Hyperkalemia; hypocalcemia; hyperphosphatemia; pregnancy/breastfeeding	Careful about concentration vs venous line access (central vs peripheral) to avoid medication incident. Slow infusion (at least 4 hours) required

Drug Classification	Drug Name & Dosage Range	Indications	Absolute Contraindications	Special Considerations (Including Contraindications)
	sodium acid phosphate (Phosphate Novartis) 500 mg effervescent tablet (16.1 mmol phosphorus) PO daily to tid for 3 to 5 days	For serum phosphate less than 0.8 mmol/L	hypernatremia, hyperphosphatemia	Repeat serum phosphorus in 4 to 6 hrs post treatment repeat once.
	Sodium chloride 1 to 2 g PO or enteral tube bid	hyponatremia, serum sodium less than 132 mEq/L; acute onset post-operatively	hypernatremia	Replace sodium at no more than 12 mmol/L per 24 h due to risk of osmotic demyelination
emollients, demulcents, and protectants	zinc oxide ointment 15% to affected area zinc oxide ointment 20% to affected area bid or tid as needed	dermatitis		Consult ID if skin irritation does not improve
fluid maintenance and replacement	0.9% sodium chloride IV at 30 to 100 mL/h; 0.9% sodium chloride IV with 20 to 40 mEq KCl/L infuse at 50 mL/h (or 75 mL/h or 100 mL/h) 0.9% sodium chloride IV bolus 250 mL – 2 L	maintenance fluid; hypovolemia; hypotension; prevention or management of vasospasm	hypernatremia	repeat blood pressure after fluid bolus; discuss clinical status with Senior resident/Attending if vasospasm suspected
	Ringers Lactate 30 to 100 mL/h IV	maintenance fluid		
	3.3 % dextrose and 0.3% sodium chloride (2/3 + 1/3) IV at 30 to 100 mL/h Or 2/3 + 1/3 with KCl 20 to 40 mEq IV at 30 to 100 mL/hr		KCl: hyperkalemia	
	conversion of an infusion to a saline lock	Patient drinking well; does not require rehydration but may require intermittent IV medications/ solutions peripherally		
gastro-intestinal (GI) prophylaxis	ranitidine 150 mg PO or enteral tube daily (or bid)	gastrointestinal protection during dexamethasone therapy; relief of heartburn and acid indigestion; gastrointestinal reflux disease (GERD)	Impaired renal function, creatinine clearance less than 30 mL/min; hypermagnesemia; do not administer if patient's diagnosis includes metabolic or respiratory alkalosis	Dose to be adjusted as per renal function

Drug Classification	Drug Name & Dosage Range	Indications	Absolute Contraindications	Special Considerations (Including Contraindications)
	esomeprazole 40 mg enteral tube daily		Patient taking clopidogrel	UHN formulary proton pump inhibitor of choice is pantoprazole. Esomeprazole should only be ordered for patients unable to swallow tablet or have enteral feeding tube
histamine H2 antagonist	famotidine 20 mg IV-int q12h (or q24h) if not tolerating PO or NG well	GI protection for dexamethasone		May cause confusion, agitation, ECG changes (QTc interval prolongation), do not use if creatinine clearance less than 30 mL/min; dose to be adjusted as per renal function.
	pantoprazole sodium 40 mg PO once daily	first line for peptic ulcer disease; patient with GERD or on dexamethasone and unable to take ranitidine		May cause decreased magnesium; decrease dose for severe liver disease

Drug Classification	Drug Name & Dosage Range	Indications	Absolute Contraindications	Special Considerations (Including Contraindications)
vitamin B1	For supplementation: thiamine 50 to 100 mg IV-int, dilute in 50 to 100 mL and infuse over 15 to 60 minutes daily For Wernicke's encephalopathy prophylaxis: 250 mg IV-int over 30 mins, daily for 3 to 5 days For suspected Wernicke's encephalopathy treatment: 500 mg IV-int three times daily for 3 days and reassess	Treatment of thiamine deficiency; to prevent Wernicke's encephalopathy in patient with decreased nutritional status, expected metabolic stress or planned administration of carbohydrates (glucose-containing fluids); for suspected Wernicke's encephalopathy treatment dose: patient must have nutritional deficiency and one of: confusion, ophthalmoplegia or gait disturbance		
vitamin B9- folic acid	folic acid 1 to 5 mg IV-int or PO or enteral tube daily	Treatment of megaloblastic and macrocytic anemias due to folate deficiency (e.g. alcoholism); dietary supplement		
vitamin C	ascorbic acid 250 to 500 mg PO daily	nutritional deficiency		
vitamin D3 cholecalciferol	vitamin D 1,000 to 4,000 units PO daily	Patient with vitamin D deficiency	hypercalcemia; malabsorption syndrome, vitamin D toxicity	elderly have decreased absorption of vitamin D
	Multivitamin – (Centrum forte) 1 tab PO daily or Multivitamin liquid 5 mL PO daily or Replavite 1 tablet daily	Malnourished patient		Replavite for patient with chronic kidney disease