VENTURA COUNTY HEALTH CARE AGENCY

List of High-Alert Medications

In the Acute Care Settings 2022-2024

High alert medications are those drugs that have been identified as potentially causing significant harm if administered incorrectly. By pro-actively identifying high alert medications, safeguards and precautions can be utilized to reduce the incidence of errors associated with these medications.

Drug class and specific medications

Anti-diuretic hormone (desmopressin)
Antithrombotic agents, including: • Anticoagulants (e.g., warfarin, LMWH or enoxaparin, unfractionated heparin) • Direct oral anticoagulants and factor Xa inhibitors (e.g., dabigatran, rivaroxaban, apixaban, fondaparinux) • Direct thrombin inhibitors (e.g., argatroban) • Thrombolytics (e.g., alteplase)
Cardiovascular agent for pulmonary hypertension (inhaled epoprostenol)
Chemotherapy agents, parenteral and oral
Contrast agents, IV
Electrolytes • Calcium for injection • Sodium chloride for injection, hypertonic, greater than 0.9% concentration • Magnesium sulfate for injection • Potassium chloride for injection • Potassium phosphate for injection
Genitourinary Tract Agent (oxytocin)
Hypoglycemic agents • Insulin, IV • Sulfonylurea hypoglycemic, oral
Moderate sedation agents, IV (e.g., dexmedetomidine, midazolam, LORazepam)
Neuromuscular blocking agents (e.g., cisatracurium, succinylcholine, rocuronium, vecuronium)
Opioids, including IV, oral, and transdermal
Parental nutrition
Titratable drips
Vasopressors

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Drug Class and Medication	Selection and Procurement	Storage	Ordering Verifying and Transcribing	Preparing or Compounding	Administration	Monitoring
Anti-thrombotic agents (anticoagulants, DOAC, factor Xa inhibitors, direct thrombin inhibitors, and thrombolytics)						
• **Anticoagulants**						
warfarin (Coumadin)	Purchased in the following unit dosed strengths to enable intact tablet selection: 1mg, 2 mg, 2.5 mg, 5mg	Stocked in automated dispensing cabinets (ADCs) and in pharmacy.	Licensed Independent Practitioner (LIP) to use approved PowerPlan to ensure proper labs and monitoring are ordered and must document indication on the order. A baseline INR must be obtained prior to initiation. Pharmacy to ensure that intact tablets are selected at order verification and dispensed. Refer to policy 100.087 and the warfarin protocol.	Unit dose strengths are supplied in designated ADCs.	Warfarin is administered daily at 1400. Refer to policy 100.205 for handling, preparation, and administration guidelines.	INR monitoring will continue daily until goal levels are achieved and then INR levels may be obtained at least twice a week. Monitor for signs and symptoms of bleeding. Refer to Clinical Practice Guideline (CPG) 56 for anticoagulant specific reversal
low molecular weight heparin (LMWH, enoxaparin, Lovenox)	Purchased by pharmacy in standard, single dose pre-filled syringes (PFS): 30 mg,40 mg, 60 mg, 80 mg, 100 mg, 120 mg, 150 mg syringes	Pre-filled syringes are stored in pharmacy and in the ADCs with careful consideration to avoid Look-alike/ Sound-Alike (LASA) confusion whenever possible.	LIP to use approved PowerPlans and must document indication on the order Baseline SCr and PLT are required. Doses must be adjusted for indication, weight/BMI, and renal insufficiency per protocol. Please refer to policy 100.087 and the enoxaparin protocol	Pharmacy dispenses pre- filled syringes for adults. For pediatric and neonatal populations, pharmacy prepares the exact dose in syringes.	Twice a day dosing of enoxaparin is administered at 0600 and 1800. Once a day dosing of enoxaparin is administered at 1000.	Monitor platelets, Hgb, Hct and SCr routinely. Adjust dose for renal impairment. Monitor patient for bleeding. Enoxaparin is contraindicated in HIT. See CPG.56 for anticoagulant specific reversal

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unfractionated heparin, IV and subcutaneous	Purchased by pharmacy in premixed solutions and in 5,000 units/mL syringes.	Stored in ADCs and in pharmacy away from products and look- alike vials that may be mistaken for heparin. Maximum Concentration available is 5,000 units/mL.	LIP to use approved PowerPlans and must document indication on the order 'Units' must be written out. The use of "U" for units is prohibited. Current patient's weight must be available prior to initiating heparin. See Policy 100.087 and heparin drip protocol	Standard concentration of heparin infusion used in adults of 25,000 units/500 mL (50 units/mL). Only one concentration permitted for treatment and prophylaxis. Heparinized saline (2 units/mL) solution is available for arterial lines in select units A 5,000 units/500 mL solution is available for Interventional Radiology (IR) thrombolysis cases only.	Heparin infusions require an independent double check (IDC) and documentation with a second licensed healthcare professional (HCP) for bolus, start of infusion, rate changes, and bag changes All heparin titrations must be documented in the EHR. Heparin is infused with a programmable pump with a guardrail safety feature. Twice a day subcutaneous dosing of heparin is administered at 0600 and 1800.	Refer to heparin protocol for daily labs, timing of anti-Xa lab draws and rate related titrations. Monitor for bleeding, patient's CMP, CBC and Coags, watch for signs and symptoms of HIT (heparin induced thrombocytopenia) with decreased platelets. See CPG.56 for anticoagulant specific reversal.
heparin flushes for neonatal and pediatric patients and dialysis heparin lock	Purchased by pharmacy: Preservative free 10 units/mL 5 mL PFS 100 units/mL 5 mL PFS Dialysis 1,000 units/mL single dose vials (SDV) Compounded by pharmacy: 100 units/ 100mL of 0.45% NaCl	Stored in select ADCs and in pharmacy. Stored separately to avoid LASA confusion.	A standardized and approved Pediatric CVC Line care and flushing order is used when ordering flushes that require heparin. The 10 unit/ mL heparin flushes are labeled as HIGH ALERT prior to dispensing. Nephrologists to use approved power plan.	Standard Heparin flushes are approved for neonatal and pediatric use and are available in premixed, prefilled syringes ready for use by the manufacturer.	All medications administered within the Neonatal and Pediatrics Units should be double checked by two HCP, prior to administration	See unfractionated heparin above for monitoring. All lines flushed with heparin will be monitored for patency and signs of bleeding. Heparin flushes are contraindicated in patients with HIT.

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• **Direct oral anticoagulants (DOAC) and factor Xa inhibitors**						
<u>Direct thrombin inhibitor</u> dabigatran (Pradaxa) **<u>Direct factor Xa inhibitor</u> apixaban (Eliquis)** **rivaroxaban (Xarelto)**	Purchased by pharmacy and available in the following strengths: dabigatran 75 mg, 150 mg tabs apixaban 2.5mg, 5mg tabs rivaroxaban 2.5 mg, 10 mg, 15 mg and 20 mg tabs.	Stocked in the ADCs in the appropriate units.	LIPs must document the indication on order. Pharmacist to verify indication for use and ensure the order is appropriate for indication, age, and renal function. Refer to policy 100.087 and DOAC CPG			Refer to CPG.56 for anticoagulant specific reversal.
fondaparinux (Arixtra) *Restricted for use in HIT*	fondaparinux in 2.5 mg, 5 mg, 7.5 mg and 10 mg syringes.	PFS are stored in pharmacy.		Pharmacy dispenses pre-filled syringes for adults. For pediatric and neonatal populations, pharmacy compounds the exact dose in syringes.	Fondaparinux is administered at 0900.	

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• **Direct thrombin inhibitors**						
argatroban	Purchased by pharmacy in single dose vials.	Stored in the pharmacy only with careful consideration to avoid LASA confusion whenever possible.	LIP to use approved PowerPlans to ensure dosing, labs, and monitoring are ordered and must document indication on the order. Pharmacist to assess that inclusion and exclusion criteria are met prior to verifying orders. See policy 100.087 and argatroban protocol	Argatroban is compounded by pharmacy in a standard adult 1 mg/mL concentration (250 mg/250 mL).	Argatroban requires an IDC and MAR documentation on with second licensed HCP for start of infusion, rate changes, and bag changes. Use programmable pumps with guardrail safety feature.	Monitor PTT, CBC, CMP, COAG, and weight routinely. See argatroban protocol. Initial dose adjustments required in patients with hepatic impairment or is critically ill. See CPG.56 for anticoagulant specific reversal
• **Thrombolytics**						
alteplase* **alteplase 2mg or (CathFlo) is **NOT** High Alert*	Purchased and compounded by pharmacy: 50 mg, 10 mg SDV For IR directed Catheter Directed Thrombolysis (CDT): 10 mg/250 mL NS 10 mg/1000 mL NS	Alteplase stored in pharmacy, stroke kit, and select ADCs	Requires a current patient weight in kg. **For Stroke:** Prescriber to dose in mg as a total dose, using the approved PowerPlan. Inclusion/Exclusion criteria to be reviewed prior to ordering. Refer to policy 100.232 Code Stroke – Intravenous for t-PA (Alteplase) Administration **For CDT**, prescriber to order alteplase using the approved PowerPlan.	The vials should **NOT** be shaken or agitated during preparation. Pharmacy to compound bolus syringe and remaining dose of alteplase for ED and ICU at VCMC. SPH ED to prepare doses for emergent need. See policy.	Requires an IDC and documentation with second licensed nurse for bolus, infusion dose, and start of infusion, plus visualization of drug and syringe Alteplase must be administered using a programmable pump with guardrail safety feature.	Per clinical practice guidelines and Stroke Protocols

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Drug Class and Medication	Selection and Procurement	Storage	Ordering Verifying and Transcribing	Preparing or Compounding	Administration	Monitoring
Antidiuretic Hormone						
desmopressin (DDAVP) subcut and IV infusion	Purchased by pharmacy in 4 mcg/mL SDV	Stored in the pharmacy department under refrigeration.	Orders for subcut or IV desmopressin will only be accepted in “mcg” doses. Pharmacist verifying subcut DDAVP orders shall ensure all doses are dispensed and labeled dose in “—mcg = ---mLs”. Pediatric population: Verify dose for age in mcgs, weight in Kg and diagnosis.	Pediatric population: All DDAVP subcut orders will be drawn up and labeled by pharmacy using a 1 mL syringe. Adult population: All doses will be drawn up by nursing using an appropriate syringe.	IV infusions can be administered over 15 to 30 minutes.	Monitor BP and HR during infusions. Also monitor sodium levels, for possible fluid overload, monitor Intake and Output and notify provider for decreased renal function. DDAVP is contraindicated for CrCl of <50 mL/min.

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Drug Class and Medication	Selection and Procurement	Storage	Ordering Verifying and Transcribing	Preparing or Compounding	Administration	Monitoring
Cardiovascular Agent for Pulmonary Hypertension						
Inhaled epoprostenol (Flolan)	Purchased by Pharmacy: Epoprostenol 1.5 mg powder vial Purchased by Respiratory Therapy: Blue Aerogen 60 mL syringe pack (with tubing) Blue Aerogen syringe cap	Medication and epoprostenol syringes are stored in pharmacy	See policy R.96 Inhaled Epoprostenol (Flolan) Attending only may order with specific indication. Dosing is based on patient's ideal body weight (kg) Attending will notify the patient's nurse and respiratory therapist of any therapy initiation, request for dose titration, or therapy cessation.	Pharmacy will prepare epoprostenol solution for nebulization and hand deliver directly to the Respiratory Therapist (RT). Backup syringe will be kept in the Pharmacy.	Nursing to provide verification double check with RT to ensure proper set up of dedicated syringe infusion pump with Aeroneb nebulizer.	Prior to start, RT will document complete ventilator check. Prior to start and after any change in dose, RN will obtain and document hemodynamic parameters at baseline, every 15min for the first 30 minutes then ever 30 minutes for the second half hour, then every 1 hour thereafter.
Contrast Agents						
IV Contrast Agents	Purchased by pharmacy in standard concentration, single dose containers.	Products are stored in pharmacy and dispensed upon request and stored in designated ADCs and locked storage cabinet in radiology and surgery.	See CPG.57 IV Contrast Guidelines Radiology technician to review patient's medications; compare them to medication reconciliation table; and take appropriate action as identified on medication reconciliation table. See Policy IS.03 Imaging Services Medication List	Only standardized concentrations, single dose containers shall be used.	For neonatal and pediatric patients, contrast agent IVP orders shall be given by either the physician or the NNP. Patients who have demonstrated past allergic reactions or who have a history of allergies will have the IV left in place throughout the procedure. Discard unused portion.	During the course of the exam, the patient shall be continually monitored by the appropriate healthcare practitioner for hives or difficulty breathing or any other changes. The patient shall not be left alone during the exam.

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Drug Class and Medication	Selection and Procurement	Storage	Ordering Verifying and Transcribing	Preparing or Compounding	Administration	Monitoring
Chemotherapy Agents, parenteral and oral						
Chemotherapy Agents	Procured for separate use by both the Infusion Center Pharmacy and VCMC Main Pharmacy Department.	Stored per United States Pharmacopeia (USP) <800> requirements. See policy PH.27.02 Hazardous Drug Storage, Handling, Labeling, and Transport	Use approved pre-printed orders or PowerPlans when ordering chemotherapy. Patient's current height, weight and BSA must be used with each dose.	Only trained personnel to prepare chemo drugs in the appropriate Primary Engineering Control (PEC) per USP <797> and <800> guidelines. Pharmacy IDC of products, diluent and calculation before admixture occurs. Infusions to be pre-spiked and tubing primed prior to dispensing Closed system transfer devices used during preparation and administration Direct hand off to nurse 1:1	Requires an IDC and documentation of order, calculation of final product, and review of pump settings with 2 licensed, competent nurses at the bedside and in the EHR. Personnel Protective Equipment (PPE) required. Use programmable pumps with guardrail safety feature. Consult Chemo Pharmacist if duration of infusion time needs to be adjusted. See policy 100.205 Safe Handling of Hazardous Medications	Verify labs prior to treatment. Documented regimen cycles to be completed. Monitor patient for adverse drug reactions.

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Drug Class and Medication	Selection and Procurement	Storage	Ordering Verifying and Transcribing	Preparing or Compounding	Administration	Monitoring
Electrolytes						
calcium chloride **calcium gluconate**	Purchased by Pharmacy Calcium Chloride is procured in prefilled syringes and vial. The vial is restricted for MTP (Massive Transfusion Protocol) only. Calcium Gluconate is procured in the vial form.	Calcium is stored in pharmacy, select boxes and kits, crash carts, and designated ADCs. Careful consideration to avoid LASA confusion whenever possible.	Specify the salt form of calcium. Order in milligram of calcium gluconate or calcium chloride. Do not order calcium in milligrams of elemental calcium. Do not order as "IM" or "SQ" routes of administration, always order as "IV." Use caution in patients who are on digoxin.	Diluted by the pharmacy 1:1 with normal saline for all calcium gluconate orders in NICU for a concentration of 50 mg/mL. Monitor for calcium – phosphate interactions in TPN solutions.	See Adult IV guidelines for restricted use. Administer by slow IV infusion using a programmable pump with guardrail safety feature.	Monitor any reports of burning sensation or tissue necrosis due to calcium administration. Monitor serum calcium and phosphate levels.
sodium chloride for injection	Purchased by pharmacy: 3% Hypertonic Saline pre-mixed NaCl 23.4% vials	Pre-mixed hypertonic saline and NaCl 23.4% are stored only in the pharmacy.	See CPG.72 Management of Neurological Emergency of Hyponatremia with hypertonic saline Hypertonic infusion orders must specify rate of infusion. Duration of therapy and frequency of sodium monitoring should be addressed	Only 3% Hypertonic Saline is available commercially. 2% Hypertonic Saline is compounded by pharmacy using 23.4% NaCl vials.	Requires an IDC and documentation with second licensed nurse at start of infusion. Must be administered using a programmable pump.	Serum sodium levels monitored according to clinical indications – consult with prescriber or refer to the physician's order.

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magnesium sulfate	Purchased by pharmacy in the 1 gm, 4 gm SDV and the 5gm and 10 gm multi-dose vials (MDV) Pre-mixed IV infusions of 2 gm/50 mL, 4 gm/100 mL, and 20 gm/500 mL are also purchased.	SDV and MDV are stored in pharmacy and restricted to compounding use. Exception: magnesium 1g/2 mL SDV available in crash carts and select ADCs Pre-mixed diluted magnesium IVPBs are available in select ADCs.	LIP to use approved PowerPlans. Magnesium must NOT be abbreviated to avoid LASA mix-up with morphine sulfate. Orders are standardized to order full grams of magnesium.	Standardized magnesium concentrations are premixed; 2 gm/50 mL, 4 gm/100 mL, and 20 gm/500 mL.	Infuse per Adult IV guidelines. Infusion of magnesium is required to be on a programmable pump with guardrail safety feature. Magnesium 20 gm/ 500mL requires an IDC and documentation with a second licensed nurse. See policy OB.47 Magnesium Sulfate for Pre-Eclampsia and Tocolytic Therapy	Monitor serum magnesium levels, watch for hypotension, hypocalcemia, hypophosphatemia, and hyperkalemia. Monitor for impaired cardiac function.
potassium chloride (KCl)	Purchased by pharmacy Premixed IV infusions of 20meq/50mL for central line and 40meq/100mL are also purchased.	Pre-mixed (diluted) KCl is stored in the pharmacy and is available in ADCs. Concentrated K products are located in the pharmacy department **and restricted to compounding use only.** Careful consideration to avoid LASA confusion whenever possible	LIP to use approved PowerPlans. Do not order as bolus. Order only standardized K-rider doses and concentrations for both central line administration as well as peripheral line administration. See policy PH.83 Intravenous Potassium Administration for Adults	Standardized concentrations of pre-mixed and/or compounded products are dispensed.	Must be administered using a programmable pump with guardrail safety feature. Max rates, Do NOT exceed: 10 mEq/hr for non monitored beds Pediatrics 0.5 mEq/kg/hr – with 10 mEq/hr max 10 mEq/hr on ANY peripheral line Up to 40 mEq/hr on a central Line AND with a cardiac monitor	Monitor serum potassium levels with a CMP.

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Drug Class and Medication	Selection and Procurement	Storage	Ordering Verifying and Transcribing	Preparing or Compounding	Administration	Monitoring
potassium phosphate (KPhos) injection	Purchased by pharmacy	Concentrated KPhos vials are stored only in pharmacy and restricted to compounding only with careful consideration to avoid LASA confusion whenever possible.	LIP to use approved PowerPlans. KPhos should be ordered in mmol of phosphorous.	Standardized drip concentrations are compounded and dispensed.	40 mEq = ˜30mmol Recommended administration time for 30 mmol is over 6 hours.	IV phosphate replacement indicated for Phos levels less than 1mg/dL, Monitor serum phosphate and calcium levels with a CMP.
Genitourinary Tract Agent						
Oxytocin (Pitocin)	Purchased by pharmacy Premixed IV infusion 30 units/ 500 mL NS	Premixed oxytocin is stored in pharmacy and in select ADCs	LIP to use approved PowerPlan if oxytocin indicated for labor induction/Augmentation and postpartum bleeding prophylaxis	Standardized concentration is dispensed	A controlled infusion system and IV administration pump with dose error reduction software must be used for oxytocin administration. See policy OB.30 Oxytocin use for Labor Induction/Augmentation A Nursing IDC is required when initiating an oxytocin infusion or changing the bag	Nursing to monitor fetal heart rate and uterine contraction patterns.
Hypoglycemic Agents						
Sulfonylurea Hypoglycemics (glyBURIDE, glipiZIDE)	Restricted in the inpatient setting: glyBURIDE – OB patients glipiZIDE – Patient's must NOT be NPO	Stored within the pharmacy with LASA precautions and in select ADCs	Pharmacists verifying the order will ensure restriction criteria are met prior to dispensing.	Available in unit dosed packaging.	Nursing to ensure bar code administration. Not to be given if patient is NPO.	Monitor for signs and symptoms of hypoglycemia especially in the elderly or those with ESRD.

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Drug Class and Medication	Selection and Procurement	Storage	Ordering Verifying and Transcribing	Preparing or Compounding	Administration	Monitoring
Insulin subcutaneous and IV	Purchased by pharmacy VCMC and SPH inventoryis restricted to the following U-100 strengths (100 units/mL): Ultra short-acting insulin: **Lispro** Long-acting insulin: **Lantus** Intermediate insulin: **NPH** **Short-acting:** **Regular** insulin is restricted for use in insulin infusions, hyperkalemia, and for hyperglycemia in ED only. Not for use in pediatric DKA.	Stored in ADCs as a MDV vial for initial doses but treated as a SDV. All MDV vials will be labeled with a 28 day expiration date and patient information when dispensed from the pharmacy for one specific patient use. In the main pharmacy, regular insulin is stored separately from other insulin formulations.	LIP to use approved PowerPlans for both subcutaneous and infusion orders. This also includes hypoglycemia treatment orders and patient own insulin pump orders. See Diabetes Management (DM) policies 1-7 Do not use the abbreviation “U” when ordering insulin, units must be spelled out. Do not place slash when ordering NPH and regular insulin.	Use only U-100 insulin. Do not draw insulin in TB syringes. Do not give NPH as an IV. All IV Insulin infusions of **REGULAR** insulin are compounded in a single standard concentration for adults (1 unit/ mL).	Insulin infusion requires an IDC and documentation with second, licensed nurse on the dose being administered as well as initial infusion, dose adjustments, and bolus doses for IV route of administration. Must use programmable pump for insulin infusions. GlucoStabilizer software is mandatory for all insulin infusions requiring nurse titrations in adult patients.	Monitor patients’ BG according to physician’s order. Monitor use of Dextrose 50% and patients with blood glucose levels < 70 mg/dl. Monitor inappropriate use of “U” instead of “units” in orders for insulin **Note:** For IV Insulin infusions monitor patient’s BG per GlucoStabilizer

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Moderate Sedation Agents, IV (e.g. dexmedetomidine, midazolam, LORazepam)						
Moderate Sedation Agents	Purchased by pharmacy in SDV, MDV and in pre-mixed solutions when available.	Stored in ADCs in locked lidded pockets. Whenever possible, SDV will not be loaded into ADCs in areas that only require minimal sedation (anxiolysis) Instead oral options will be made available.	LIP to use approved PowerPlans to order infusions. Physician orders include titration parameters and hold parameters.	Infusions not available in the premixed concentrations will be compounded by the Pharmacy Department.	All titratable drips require the use of the pump with the safety guardrail. IV Push medications per IV administration guidelines Requires an IDC without MAR documentation for start of infusion and bag changes.	For titratable drips, monitoring parameters must be ordered and documented on the EHR (interactive view) with nurse driven titrations as outlined in the titratable drips policy CC.23 Intravenous Medication Titration in Critical Care Areas See policy 100.070 Moderate and Deep Sedation
Neuromuscular Blocking Agents (NMBA)						
Neuromuscular Blocking Agents (NMBA)	Purchased by pharmacy Cisatracurium 20 mg/10 mL MDV Rocuronium 50 mg/5 mL MDV Succinylcholine 100 mg/5 mL PFS 200mg/10 mL MDV Vecuronium 10mg SDV	Segregated or stored in high alert bins in pharmacy. Stored in special locked intubation kits, in designated ADCs, in locked-lidded pockets, and in OR trays. Refrigerated rocuronium has a 60 day BUD out of the fridge. Succinylcholine PFS has a 90 day BUD.	LIP to ensure adequate pain and sedation control prior to and during the use of NMBA drips for patients in the critical care areas. Do not refer to neuromuscular blockers as “relaxants”.	Pharmacy completes a verification double check of standardized drip concentrations compounded by pharmacy. See Adult IV guidelines. Pharmacy to dispense vials, drips, and PFS with auxillary labels whenever possible to designate that these medications are paralyzing agents.	Stipulate neuromuscular blockers are to be discontinued and paralysis status checked (e.g. train of four = 4/4) when patient is extubated and removed from the ventilator. Use a programmable pump for NMBA IV infusions.	Check reflexes. Motor/sensory responses. Use Train-of-four for monitoring NMBA effectiveness. Ensure adequate pain and sedation has been achieved prior to initiation and during NMBA drip use.

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Opioids, oral, IV, and transdermal						
Opioids	Purchased by pharmacy	Products are stored in secure locked storage areas and ADCs in locked lidded pockets with careful consideration to avoid LASA confusion whenever possible. The lowest strength presentation of opiate injectables will be loaded into the ADC whenever possible. Fentanyl patches are not loaded in areas that treat primarily acute pain whenever possible.	LIP to use approved PowerPlans or subphases for all patient controlled analgesia (PCA), titratable, and palliative care orders. The abbreviation “MS” is not accepted for morphine. Use lower recommended starting doses in opiate naïve patients. Use caution with concurrent benzodiazepines due to respiratory depression and possible death. LIPs are not to order fentanyl patches for opioid naïve patients or patients with acute pain (see fentanyl patch policy for exception)	Standard concentrations are purchased or compounded by pharmacy.	PCAs require an IDC and documentation by two licensed nurses for all PCA settings including initial dose, rate changes and syringe changes. For infusions, titrate per prescribers ordered parameters (see titratable drips) Lockboxes and portless tubing should be used for all end-of-life controlled substance infusions and at the care team’s discretion. For fentanyl patches, see policy PH.118	For pain assessment, management, and documentation, see policy 100.076 Refer to policy 100.253 Naloxone for opioid toxicity Naloxone is available in all ADCs and crash carts as a reversal agent.

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Parenteral Nutrition Solutions						
Parenteral Nutrition (PN) Solutions	Procurement outsourced to CAPS for VCMC only. Base solution and ingredients purchased by the Pharmacy Department with careful consideration to avoid LASA confusion whenever possible.	CAPS delivery by 1800 and pharmacy will deliver PN to the floors for imminent administration. Ingredients stored in pharmacy with concentrated electrolyte sections.	NICU and PEDs PN orders are computer generated, signed by the LIP and faxed to the Pharmacy by 1100 daily. All other PNs are ordered using approved PowerPlans and are delivered to pharmacy by 1200 for processing daily.	PN to be outsourced to CAPs for VCMC only. Pharmacists complete a verification double check before dispensing. If a PN is compounded, pharmacist performs a manual check of all additives prior to injection into final product including a visual inspection of the final product.	Requires a verification double check and documentation at start of infusion and with bag changes. All PNs and lipids require a 1.2-micron filter. **Replace all PN's daily at 1800.**	Monitor blood glucose for hypo or hyperglycemia. Monitor electrolytes and nutritional requirements daily.
Titratable Drips						
Titratable Drips for Adults	Purchased by Pharmacy in premixed solutions and in standardized concentrations whenever possible.	Stored in the pharmacy and in designated ADCs	LIP to order using approved PowerPlans. Order includes titration parameters and hold order information. Pharmacist may assist in order entry of standardized double and quadruple strength concentrations using approved PowerPlans	Drips not available in the premixed concentrations will be compounded by the Pharmacy Department and require a verification double check before dispensing. Drips to be labeled with colored drip identifiers to help reduce LASA mix-ups prior to dispensing.	All titratable drips require the use of the pump with the safety guardrail requires an IDC without documentation for start of infusion and bag changes	Monitoring parameters must be documented as outlined in the Adult titratable drip guideline (see policy CC.23)

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Vasopressors						
Vasopressors	Purchased by pharmacy in standard concentrations of SDV, ampules, and PFS	Stored in pharmacy and in designated ADCs, epidural cart, and in crash carts. LASA strategies employed: **TALL**man lettering, color and shape variability, reverse print, and physical storage separation.	LIP to order using approved PowerPlans and/or for specific dose.	Drips are compounded by pharmacy in standard concentrations (see titratable drips). Standard concentration of single dose ampules and vials and PFS shall be obtained from designated crash carts and ADCs.	See adult IV administration guidelines	Monitoring parameters must be documented as outlined in the Adult titratable drip guideline (see policy CC.23)
EPINEPHrine	**EPINEPH**rine 1 mg/mL 1 mL ampule 30mL SDV **EPINEPH**rine 0.1 mg/mL abboject emergency syringe **EPINEPH**rine 10 mcg/mL PFS **PRESSOR DOSE**	**EPINEPH**rine 10 mcg/mL PFS **PRESSOR DOSE **: restricted to the following ADCs: ICU3, SP ICU, ED, SP ED, PACU, SP PACU, OR, SP OR.	**EPINEPH**rine 10 mcg/mL PFS **PRESSOR DOSE ** restricted to acute hypotension in patients with cardiac dysfunction ONLY. NOT for ACLS.		**PRESSOR DOSE** PFS is a rapid IVP through central venous access (preferred). In an emergent setting peripheral venous/ intraosseous (IO) access is allowed. **PRESSOR DOSE** requires an IDC without documentation with a second licensed HCP.	**PRESSOR DOSE** PFS requires continuous HR and BP monitoring, preferably through an arterial catheter.
PHENYLephrine	**PHENYL**ephrine 10 mg/mL SDV 1mL 5mL **PHENYL**ephrine 100 mcg/mL PFS **PRESSOR DOSE**	**PHENYL**ephrine 100 mcg/mL PFS **PRESSOR DOSE** is restricted to the following ADCs: ICU3, SP ICU, ED,SP ED, PACU, SP PACU, OR, and SP OR.	**PHENYL**ephrine 100 mcg/mL PFS **PRESSOR DOSE** is restricted to acute hypotension ONLY.			