	POLICY Number: 7311-60-020 Title: HIGH ALERT MEDICATIONS – IDENTIFICATION, DOUBLE CHECK AND LABELING
Authorization [ ] President and CEO [X] Vice President, Finance and Corporate Services	Source: Chair, Medication Use Quality Committee Cross Index: Date Approved: March 6, 2009 Date Revised: July 4, 2013 Date Effective: July 17, 2013 Scope: SHR & Affiliates

OVERVIEW

This policy outlines the required minimum standards for the administration of high alert Medications; additional policies and procedures are referenced.

Departments/units/affiliates may have additional protocols/procedures relating to high alert medications; these must comply but are not limited to content herein.

DEFINITIONS

Clinician is any health care professional accepting responsibility for care of patients and their medications.

High-Alert Medications are medications that bear a heightened risk of causing significant patient harm when used in error as defined by the Institute for Safe Medication Practices (ISMP).

Independent Double-Check means the process where two clinicians separately check (alone and apart from each other, then compare results) each component of prescribing, dispensing and verifying the high-alert medication for errors before it is administered to the patient. The clinician checking has to form an independent judgment without cues from the clinician doing the initial work.

Medication Administration Record is any record in which the clinician would document the medication administered.

Patient means any individual who is receiving care in a SHR facility/affiliate, or is a participant in a SHR recognized program or service.

Verification means a visual check that the correct medication, dose, rate and route is being administered according to the current prescribed medication order.

1. PURPOSE

The purpose of this policy is to identify high-alert medications for all clinicians involved in the prescribing, dispensing, and administration of these medications. This policy also establishes requirements for independent double checks, safe storage, handling and administration of high-alert medications.

2. PRINCIPLE

High-alert medications are drugs that bear a heightened risk of causing significant patient harm when they are used in error[1].

3. POLICY

High Alert Medications

3.1 Saskatoon Health Region (SHR) identifies the following as high alert medications (see Appendix A for specific medication information).

High-Alert Medications	Route of Administration					
	IV	**IM**	**SC**	**Topical**	**Epidural**	**Intrathecal**
Chemotherapy	√	√	√			√
Anticoagulants	√					
Insulin	√		√			
Concentrated electrolytes	√					
High Potency Narcotics	√	√	√	√	√	√
Neuromuscular Blocking Agents	√					
Vasoactive Agents	√					
Local anesthetics					√	

Independent Double Check

3.2 An independent double-check is required prior to the administration of any dose of high-alert medications.

3.2.1 Documentation of independent double-checks will be completed on the medication administration record and include both clinicians' initials and time of double-check.

3.2.1.1 Documentation of independent double check of subcutaneous insulin is completed on the bedside glucose monitoring and insulin administration record.

3.2.2 When an independent double check cannot be performed, the clinicians will be aware of and alerted to all high risk medications (see procedure 2.5).

3.2.3 SHR departments/units/affiliates may further identify medications that require an independent double check.

Exception

3.2.4 Independent double checks are not required for continual titration in ICUs and CCUs.

[1] ISMP

Verification

3.3 Verification of correct medication, dose, rate and route is required at shift change and transfer of care (hand-off) for any intravenous or epidural infusions of high-alert medications.

3.3.1 A visual check for correct medication, dose and rate shall be performed at the bedside by the clinician.

3.3.2 Following a visual check at the bedside, documentation will occur on the medication administration record including the clinician's initials and time.

Storage/Stock

3.4 Commercially packaged or pharmacy prepared pre-mixed solutions of high-alert medications will be used when available and when applicable to the patient population.

3.5 The number of concentrations and/or volume options available for all high-alert medications on patient areas will be limited.

3.6 Storage bins must be affixed with a "high-alert" label.

3.7 Look-a-like, sound-a-like products must be segregated.

3.8 Discontinued, expired, damaged and contaminated products are segregated and isolated until removal from the unit/facility.

3.9 Where possible, multidose vials are reduced or eliminated.

3.10 All premixed epidural solutions will be clearly labeled, "For Epidural Infusion Only" and stored separately from all intravenous solutions.

Administration

3.11 All high-alert medications administered as intravenous or epidural infusions will be administered using **standardized concentrations.**

3.11.1 If a concentration other than the standardized concentration is required, it must be ordered by a physician and identified on the infusion bag and medication administration record.

3.12 Infusion pump settings (i.e. dose and rate) are visually checked hourly and volume charted at the bedside on the appropriate fluid balance record in all units/facilities.

3.13 A dedicated infusion pump must be used for all high alert medications.

4. ROLES AND RESPONSIBILITIES

4.1 Clinicians

4.1.1 Be aware of all medications identified as high alert.

4.1.2 Comply with independent double checks, storage and administration requirements related to high alert medications.

5. POLICY MANAGEMENT

The management of this policy including policy education, monitoring, implementation and amendment is the responsibility of the Chair, Medication Use Quality Committee.

6. NON-COMPLIANCE/BREACH

Non-compliance with this policy will result in a review of the incident. Repeated non-compliance may result in disciplinary action, up to and including termination of employment and/or privileges with SHR.

7. REFERENCES

Nursing Policy and Procedure Manual:

Chemotherapy Drugs for Cancer Treatment: Administration & Precautions
Chemotherapy Drugs for Non-Cancer Treatment: Administration & Precautions
Epidural/Intrathecal Analgesia – Care of Patients Receiving;

Moderate Sedation for Adults (Age 18 Years and Older)

Narcotic – Administration & Control; Patient Controlled Analgesia (PCA)

Procedural Sedation/Analgesia Guidelines – Pediatric

Medications – Multidose Vials

Intravenous and/or Peripheral Saline Lock Insertion & Maintenance

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OVERVIEW

Units/departments/affiliates may have additional protocols/ procedures relating to high alert medications; these must comply but are not limited to content herein. All clinicians will have access to educational resources related to the administration of high alert medications.

1. PURPOSE

The purpose of this procedure is to standardize the process for the delivery of high alert medications.

2. PROCEDURE

Independent Double Check

2.1 Verify the following information during the double-check process:

- Am I looking at the right patient's chart?
- Is this the most recent order?
- Is this the prescribed drug?
- Is this the prescribed dose/strength/rate and route of administration?
- Is this the prescribed frequency/time for drug administration?
- Is the infusion pump programmed with the correct concentration and infusion rate (ie. mcg/kg/min., etc)?
- Is the rate correct when the dose or infusion rate has changed?

Preparation of Medication

2.2 The clinician administering the medication:

2.2.1 Prepares the medication using the appropriate checks outlined in 2.1 when required,

2.2.2 Provides order/medication administration record, drug dose and source (i.e. vial, ampule or package) to clinician performing the double check.

2.3 The clinician performing the independent double check:

2.3.1 Reviews order/medication administration record, drug dose and source (i.e. vial, ampule or package) of the clinician who prepared the medication,

2.3.2 Compares the prepared medication to the prescriber's order,

2.3.3 Compares the prepared medication to the source (i.e. vial, ampule or package) and confirms that the components, dose, volume and concentration are correct.

Infusion Program Check

2.4 Clinicians programming the pump and performing the double check independently check for accuracy:

- Medication
- Admixture concentration
- Dosing formula i.e. mcg/kg/min, units/hr
- Weight, if applicable
- Rate

Clinicians Working Alone

2.5 When working as the only clinician

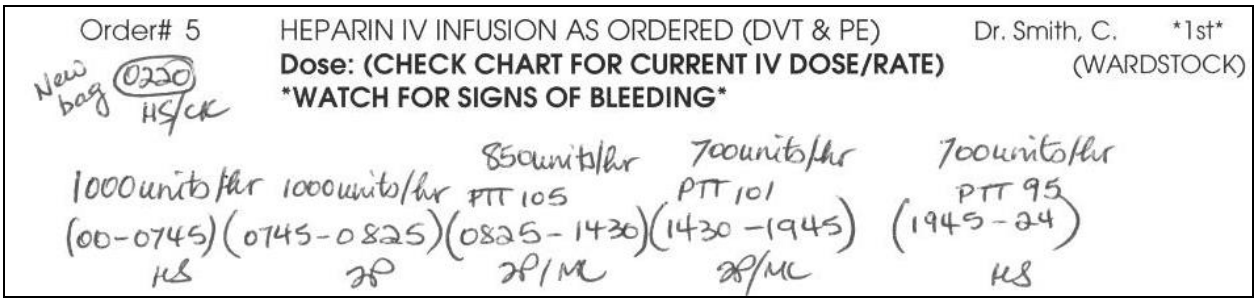
- If available, ask the prescriber for an independent double-check.
- Conduct a double-check by repeating the steps a second time just prior to administration.
- When appropriate, involve the patient/guardian in the verification of drug and patient identity.

Documentation

2.6 Both clinicians initial beside the dose and time of double check in the medication administration record (see examples below).

2.6.1 For infusions, document concentration and time the infusion bag was hung.

EXAMPLE



2.7 Shift Change and Transfer of Care (Hand-off)

2.7.1 Visually check current high alert infusions for correct medication, dose, rate and route (at the bedside) with current prescribed medication order.

2.7.2 Chart the time of verification and initial on the medication administration record.

Note: *When you have documented a medication infusion at shift change and transfer of care, you have confirmed that verification has occurred.*

3. PROCEDURE MANAGEMENT

The management of this procedure including procedures education, monitoring, implementation and amendment is the responsibility of the Chair, Medication Use Quality Committee.

4. REFERENCES

Institute for Safe Medication Practices. 2012 List of High-Alert Medications.

Elkin M. K., Perry A. G. & Potter P. A. 2004. Nursing Interventions & Clinical Skills, 3rd Edition. Mosby. St. Louis Missouri. Pp. 437.

Pharmacy Practice Manual: Clinical Practice Standard & Procedure. October 2011. High Alert Medication Management – Nursing. Interior Health, B.C.

STORAGE OF SPECIFIC HIGH-ALERT MEDICATIONS & Concentrated electrolytes

Product	Strength	Stock Locations	Exceptions/Comments
Concentrated Electrolytes			
Calcium Chloride Inj.	1g/10mL (5 g/50 mL)	PICU for CRRT	
Calcium Chloride PDS Inj.	10%	Code cart Module C Air Ambulance	
Calcium Gluconate Inj.	1g/10mL	RUH: 5000, CCU, DU, ER ICU, MDC, NICU, OR, PICU, SCH: Night cupboard /ED/OR SPH: 5a, 5b, 6med, 7med, CRHC, PACU, 4b, RU, ICU, ER, night cupboard	
Calcium Gluconate Inj.	10% 100mL	ICU for CRRT TPN preparation	
Magnesium sulfate	5 g/ 10 mL (vial) 25 g/50 mL (vial)	NICU, PICU, RUH OR, EP lab, Acute Care pediatrics, code cart drug modules, Air Ambulance TPN preparation	
	2 g (54mL) bag	Stocked in most patient care areas or sent patient specific	
	20 g (540 mL) bag	Stock in L&D	
Potassium acetate	4 mmol/mL 50 mL (vial)	Pharmacy ONLY TPN preparation	Patient specific in pediatrics
Potassium chloride	2 mEq(mmol)/mL (10 mL,20 mL vial)	RUH OR Perfusion Room ONLY TPN preparation	Labeled Concentrated Potassium Chloride and stored on designated High Alert shelf
	10 mEq/100 ml bag 20 mEq/100mL bag	Supplied by SPD throughout the facility (not available on acute care peds)	
	20 mEq / 50 mL bag (0.4 mmol / mL)	Stock supplied by Pharmacy to PICU and NICU only	PICU and NICU: locked on the unit, dispensed and labeled High Alert & For Dilution Only Patient specific dose to other areas of pediatric- labelled high alert

Product	Strength	Stock Locations	Exceptions/Comments
Potassium phosphate	3 mmol/ mL 15 mL vial		Order must specify dose in mmol of phosphate(not mEq) Patient specific for pediatrics where concentration of prepared bags are not appropriate (15 mL vial only)
	220 mmol/50 mL	TPN preparation	
	15 mmol/250ml bag	ICU SPH/ SCH night cupboard	Patient specific to other areas
	30 mmol/ 250mL bag	ICU	Patient specific to other areas
	30 mmol/ 100mL bag		Sent patient specific for severely fluid restricted patients
Sodium acetate	200 mEq/50 mL (vial)	Pharmacy for TPN preparation,	-Patient specific in acute care pediatrics, NICU and PICU
	4 mEq/52 mL (vial)		Dilution prepared in pharmacy. For arterial lines NICU patient specific
	8 mEq/52 mL (vial		Dilution prepared in pharmacy. For arterial lines NICU patient specific
Sodium chloride	3% 250 mL (bag)	PICU, ED, SPH night cupboard, Air Ambulance RUH ICU	ED and PICU Labeled "High Alert, Double Check" and locked in a designated area segregated from non-medicated intravenous solutions. RUH ICU Labeled "High Alert, Double Check", stored in high alert section of medication room and segregated from non-medicated intravenous solutions
	3% 10mL vial		Patient specific to NICU/PICU Labelled high alert

Product	Strength	Stock Locations	Exceptions/Comments
Sodium chloride (continued)	8 mEq/ 2mL vial (23.4%)	NICU for preparation of IV infusions.	Designated, storage area clearly marked "High Alert, Double Check".
	120 mEq/ 30mL vial (23.4%)		Sent by Pharmacy – patient specific. ED, ICU, PICU Labelled high alert, double check
	23.4% (100 mL or 200mL)	TPN preparation Repacked by pharmacy for oral use on pediatrics (5mL)	
Sodum Phosphate	30 mmol/10ml vial	ICU, ED, Night cupboard, PICU	Patient specific to other areas
Intravenous Anticoagulants			
Heparin ▪ When a dose/infusion rate changes, document the appropriate blood result (i.e. aPTT) on the medication administration record ▪ Store at room temperature	2 units/ mL (1000 mL infusion bags)	Stocked in CCU, CSSU and Perfusion	Used for pressure lines and intra-aortic balloon pump
	50 units/ mL (500 mL bag)	Ward stock in all adult patient units	50 units/ mL infusion bags sent patient specific for pediatrics
	1,000 units / mL (10 mL vial)	Ward stock in *all* adult patient units for bolus doses	Used for bolus doses associated with Heparin nomograms
	100 units / mL (10 mL vial)	Ward stock in all patient units	For line flushes
	10,000 units / mL (0.5 mL ampule/vial)	Ward stock in OR Night Cupboard	Not available on general nursing units. Dispensed patient specific for subcutaneous doses.

Product	Strength	Product	Exceptions/Comments
High Potency Injectable Narcotics			
Dilaudid (HYDROmorphone) injectable	2 mg/ mL	All patient care areas	
	Concentrations greater than 2 mg/ ml	6100 RUH SPH Palliative, ICU, PICU	-Dispensed from the pharmacy on a patient specific basis for all other areas. - Return to pharmacy upon discontinuation or patient discharge. -Labeled "High Alert, Double Check" prior to being dispensed from pharmacy
Methadone injectable			Special access product Sent patient specific
Morphine injectable	2 mg/mL	All patient care areas	
	10mg /mL	All adult patient care areas PICU, NICU, Acute Care Pediatrics	
	50 mg/ mL	RUH 6100, SPH pall care, ICU ,OR (not in SPH OR) Patient specific only at SCH	-Dispensed from the pharmacy on a patient specific basis for all other areas. -Will be returned to pharmacy upon discontinuation or patient discharge. -Labeled "High Alert, Double Check" prior to being dispensed from pharmacy
Narcotic PCA Cartridges	PCA	All patient care areas	
Fentanyl injection	100 mcg/ 2mL (vial)	All patient care areas	High alert pediatrics
	250 mcg/5mL (vial)	SPH: OR, Palliative care SCH OR RUH: OR	
	1000 mcg/20mL (vial)	Operating rooms, ICU, CCU and PICU, L & D, PAL Not stocked at SCH	
Narcotic Patches	All strengths	Narcotic patches will be dispensed as routine narcotic stock	

Product	Strength	Stock Locations	Exceptions/Comments
Insulin			
Vials All Types Patient Specific Insulin Pens	100 units/mL 3 mL vial or 10 mL	Available in all patient units Patient Medication Drawers of Medication carts/drawers	-Stored in the refrigerator in yellow high alert bins -Must be dated when opened and stable for 30 days -Insulin pens will be labeled with a patient name and used only for that patient Do not refrigerate
Intravenous Vasoactive Agents			
Adrenergic agonists Adrenergic antagonists			A physician order is required that specifies a starting dose and titration parameters.
Chemotherapy			
All chemotherapy agents	All formulations	Stored in designated room in pharmacy.	Prepared and dispensed patient specific.
Neuromuscular Blocking Agents			
Cisatracurium, Pancuronium, Rocuronium, Succinylcholine	All concentrations	Neuromuscular blocking agents may be **ONLY** provided as wardstock to OR, Critical care areas and ECT area of Dube L & D- emergency kit RSI kits Night Cupboards **SCH** Surgical Obs Units **SPH** Air Ambulance, Litho	- Order must specify a dose range, titration parameters and/or clinical endpoints for continuous infusions. -must be labeled "Warning: Paralyzing Agent, Causes Respiratory Arrest", -Store in designated areas, in separately labeled, clearly identified containers.

*Unavailability of products due to drug shortages may necessitate temporary substitutions or alternate product sizes from those listed in this table.