I. SCOPE:

This policy applies to [insert hospital name] (“Hospital”) and its Medical Staff.

II. PURPOSE:

The purposes of this policy are to increase patient safety by avoiding preventable injuries associated with high alert medications (see Attachment A) and to provide standardized drug safety policies for “high alert” medications as identified by The Joint Commission (TJC) and the Institute for Safe Medication Practices (ISMP).

III. DEFINITIONS:

A. “High Alert Medications” mean medications that bear a heightened risk of causing significant patient harm when they are used in error.

B. “Independent Double Check” means a procedure in which two clinicians separately check (alone and apart from each other, then compare results) each component of prescribing, dispensing, and verifying the high-alert medication before administering it to the patient.

C. “5 Rights” refer to the five items the RN/physician/LIP/pharmacist (within the scope of each discipline) will ensure the correct (right) patient, medication, route, dose and frequency prior to any medication administration.

D. “Patient Identification” means a procedure in which patient identification is verified using two unique identifiers against the information on the patient’s ID band. [Note: Patient Identification procedures are hospital-specific]

E. “Licensed Independent Practitioner” or “LIP” means a non-physician provider, such as a nurse practitioner, physician assistant or nurse midwife.

IV. POLICY:

The Hospital’s policy is to promote patient safety by avoiding preventable injuries associated with “high risk” drugs based on TJC and ISMP evaluation of actual sentinel events. In addition, it is the Hospital’s policy to decrease unnecessary costs associated with preventable adverse drug events. In order to reduce the chance of a medication error, the Hospital requires the medication administration process to include a process verifying the 5 Rights of all High Alert Medications being ordered. The process shall also include verification of appropriate indication, appropriate lab values, calculations and pump settings. The verification process includes review of potential
contraindications, medication administration record verification, calculations of preparation and visualization of the medication in the form it is delivered. The physician, LIP, pharmacist and nurse each play a role in the process. As an added safeguard, when a nurse is initiating administration of High Alert Medications, a second nurse will perform an Independent Double Check.

The following medications are considered High Alert Medication:

A. Independent Double Check High Alert Medication List
   - Insulin; including infusion, intravenous and subcutaneous Administration
   - PCA Opioids and Opioid Drip
   - Heparin Infusions
   - Chemotherapy/antineoplastic agents
   - Magnesium infusions – large volume, continuous OB/LD
   - Neuromuscular Blocking Agents (Paralytics) [Insert Hospital’s Approved Agents]
   - TPN (IV) Infusion

B. Additional High Alert Medication List
   - Potassium
   - Dextrose bolus > 10%
   - Methotrexate, oral, non-oncologic use
   - Vincristine
   - Opioid narcotics
   - Sodium Chloride - hypertonic
   - IV Adrenergic Agonists (epi, norepi, phenylepine)
   - Pitocin
   - promethazine

V. PROCEDURE:

A. Physician/LIP Order, Pharmacy Dispense, Nurse Administration
   1. The physician/LIP will verify during the time of ordering that the 5 Rights and additional verifications have been applied for High Alert Medications that are ordered.
INDEPENDENT DOUBLE CHECK – HIGH ALERT MEDICATION ADMINISTRATION

2. The pharmacist will verify during the time of prior review and order entry that the 5 Rights and additional verifications have been applied for High-Alert Medications that are ordered. In addition, High Alert Medications will be labeled as such prior to delivery to the patient floor only after confirming the 5 Rights.

3. Nursing will verify prior to administration that the 5 Rights and Independent Double Check process, as defined above, have been applied for high-alert medications that are ordered.

B. Nurse Independent Double Check

Certain high alert medications require additional verification safeguard checks. In addition to the 5 Rights of medication administration and Patient Identification verification procedures, the Independent Double Check process is required (see Attachment B for a list of the High Alert Medications):

1. The primary and second nurse (RN or LPN) will perform the Independent Double Check process, as defined above, on the administration of High Alert Medications. Both nurses shall document the verification process on the narrative section (dated and timed) of the Patient Flow Sheet. [Hospitals: insert hospital-specific process: narrative, label, Pyxis, and/or computer]

2. This procedure will be followed when

   a. Initiating a drug from the Independent Double Check High Alert Medication list as noted in Subsection IV.A.

   b. Changing the rate of an Independent Double Check High Alert Medication list as noted in Subsection IV. A.

   c. Care Providers change (e.g., change of shift – bedside report, transfer between units) while a patient is on a continuous IV infusion from the Independent Double Check High Alert Medication list as noted in Subsection IV.A.

C. Responsible Person
The [insert title] shall be responsible for assuring that all Hospital staff adhere to the requirements of this policy, that these procedures are implemented and followed at the Hospital, and that instances of noncompliance with this policy are reported to the Chief Nursing Officer.

D. Enforcement

All Hospital staff and Medical Staff Members whose responsibilities are affected by this policy are expected to be familiar with the basic procedures and responsibilities created by this policy. Failure to comply with this policy will be subject to appropriate performance management pursuant to all applicable policies and procedures, including the Medical Staff Bylaws, Rules and Regulations.

VI. REFERENCES:
- Agency for Healthcare Research and Quality (n.d.). TeamSTEPPS® Essentials Course. Retrieval link
- Resources: Nursing, Risk Management, Pharmacy [Insert Hospital-specific]

VII. ATTACHMENTS:
- Attachment A: Institute of Safe Medication Practice’s List of High-Alert Medications
- Attachment B: Independent Check High Alert Medication List
- Attachment C: Additional High Alert Medication Table
ISMP’s List of High-Alert Medications

**Background**
Based on error reports submitted to the ISMP National Medication Errors Reporting Program, reports of harmed patients in the literature, and input from practitioners and safety experts, ISMP created and periodically updates a list of potential high-alert medications. During October 2010 to February 2012, 722 practitioners responded to an ISMP survey designed to identify which medications were most frequently considered high-alert drugs by individuals and organizations. Further, to assure relevance and completeness, the clinical staff at ISMP, members of our advisory board, and safety experts throughout the US were asked to review the potential list. This list of drugs and drug categories reflects the collective thinking of all who provided input.

**Classes/Category of Medications**

<table>
<thead>
<tr>
<th>Medications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infectious agents, IV (e.g., GENTAMICIN/Amikacin, tobramycin, polymyxin)</td>
</tr>
<tr>
<td>Anticoagulants, IV (e.g., heparin, low molecular weight heparin, LMWH)</td>
</tr>
<tr>
<td>Vasoactive agents, IV (e.g., dobutamine, dopamine)</td>
</tr>
<tr>
<td>Anesthetic agents, IV (e.g., thiopental, etomidate, propofol)</td>
</tr>
<tr>
<td>Cardioplegia solutions</td>
</tr>
<tr>
<td>Chemotherapeutic agents, parenteral and oral</td>
</tr>
<tr>
<td>Osmotic hyperosmotic, 290m osm or greater</td>
</tr>
<tr>
<td>Hypnotics and hypnotics</td>
</tr>
<tr>
<td>Irritant or vesicant agents, IV (e.g., mechlorethamine, mitomycin)</td>
</tr>
<tr>
<td>Neurotoxic medications, IV (e.g., vincristine, vinblastine)</td>
</tr>
<tr>
<td>Osmoprotective solutions</td>
</tr>
<tr>
<td>Narcotic analgesics, IV (e.g., fentanyl, hydromorphone)</td>
</tr>
<tr>
<td>Transmucosal agents, IV (e.g., propofol, thiopental)</td>
</tr>
<tr>
<td>Dosing medications consisting of saline solutions, IV (e.g., NaCl, glucose)</td>
</tr>
</tbody>
</table>

**Specific Medications**

<table>
<thead>
<tr>
<th>Medications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertonic saline injection</td>
</tr>
<tr>
<td>Indocyanine green or indocyanine green sodium (IV)</td>
</tr>
<tr>
<td>Optima vicine (IV)</td>
</tr>
<tr>
<td>Steroids, IV</td>
</tr>
<tr>
<td>Intravenous sodium for injection</td>
</tr>
<tr>
<td>ThalamMICM carbonate for injection concentrate</td>
</tr>
<tr>
<td>Tubocurarine chloride injection</td>
</tr>
<tr>
<td>Propofol, IV</td>
</tr>
<tr>
<td>Metocurine, IV</td>
</tr>
</tbody>
</table>

**References**

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## Independent Check High Alert Medication List

<table>
<thead>
<tr>
<th>HIGH ALERT MEDICATION</th>
<th>SUMMARY OF DOUBLE CHECK REQUIREMENTS</th>
</tr>
</thead>
</table>
| **Insulin (IV/SC)**    | Anytime a nurse prepares a dose of **INSULIN** a second nurse must **double check** the chart order or MAR with: the insulin type, actual container from which the dose was taken, the dose required, the actual dose drawn to determine accuracy, the route.  
Any time an insulin drip is initiated or adjusted the pump settings nurse initiates or adjusts the pump settings for an insulin drip, a second nurse must **double check** the chart order or MAR with: Concentration, Calculated rate, Correct pump settings .  
The **double check** is documented with the initials of both nurses on the Medication Administration Record. |
| **PCA Opioids and Opioid drips** | Anytime a PCA opioid or opioid drip is being set up or a change is made to the settings, a second nurse must **double check** the chart order or MAR with: Correct Drug, Correct concentration, and Correct pump settings.  
The double check is documented with the initials of both RNs on the Medication Administration Record. |
| **Heparin (IV)** | Anytime a nurse prepares a dose of **HEPARIN for intravenous administration** a second nurse must **double check** the chart order or MAR with: actual container from which the dose was taken, the dose required, the actual dose drawn to determine accuracy  
Anytime a nurse prepares an **IV infusion of HEPARIN** a second nurse must **double check** the chart order or MAR and verify the pump settings are accurate for the dosage rate to be infused assuring that the volumetric rate is accurate prior to starting the pump. |
| **Chemotherapy (IV)** | **Verbal orders are not allowed**  
Regimens, doses and all calculations must be **double-checked** with 2 pharmacists  
Only chemo or specially trained/certified nurses are permitted to administer chemotherapy  
A second R.N. will **double-check** the chart order, concentration and infusion rate.  
The double check is documented with the initials of both RNs on the MAR. |
| **Magnesium Sulfate (OB/LD Large Volume continuous infusions)** | A second R.N. will **double-check** the chart order, concentration and infusion rate.  
The double check is documented with the initials of both RNs on the MAR. |
| **Neuromuscular Blocking Agents**  
(succinylcholine, rocuronium, vecuronium)  
[Insert Hospital’s Approved Agents] | A second R.N. will **double-check** the chart order, concentration, infusion rate and that mechanical ventilation is in place and operational.  
The double check is documented with the initials of both RNs on the MAR. |
| **TPN/PPN** | A second R.N. will **double-check** the chart order, concentration and infusion rate.  
The double check is documented with the initials of both RNs on the MAR. |
## Additional High Alert Medication Table

<table>
<thead>
<tr>
<th>ADDITIONAL HIGH ALERT MEDICATIONS</th>
<th>SUMMARY OF SAFETY FEATURES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Potassium</strong></td>
<td>Concentrated vials are not permitted outside of the pharmacy Commercially available, pre-mixed, ready-to-use solutions are to be utilized Adhere to maximum rate and concentration guidelines for solutions – see specific hospital policy</td>
</tr>
<tr>
<td><strong>Dextrose &gt; 10%</strong></td>
<td>Utilize standardized procedure for treatment of hypoglycemic patient</td>
</tr>
<tr>
<td><strong>Methotrexate, oral, non-oncologic use</strong></td>
<td>Verify frequency and dose – noting that this should be dosed in weekly increments for many indications</td>
</tr>
</tbody>
</table>
| **Sodium chloride greater than 0.9%** | Verify the chart order, concentration and infusion rate. ***Permit concentrated sodium chloride (>0.9%) vials to be kept in locked storage for use by dialysis staff. The concentrated sodium chloride is used in STAT situations to treat hypotension resulting from hemodialysis. If not treated in a timely manner, hypotension could quickly progress to a code situation. These systems are in place to assure the safety of the proposed alternative:  
  - The concentrated sodium chloride vials are kept in a locked area designated for dialysis staff only.  
  - The concentrated sodium chloride vials are the only drug stored in that area.  
  - The par level identified for the dialysis unit should be limited to the amount needed to meet the needs of a single patient.  
  - A process should be in place to account for any unused medication and to restock the secure storage level as soon as possible after use.  
  - Highly visible "Concentrated Electrolyte" stickers are placed on each sodium chloride vial.  
  - Access to the concentrated sodium chloride is limited to specified, properly oriented dialysis nurses and physicians. |
| **IV Adrenergic Agonists**        | Verify the chart order, concentration and infusion rate. |
| **Vincristine**                  | NO INTRATHECAL ADMINISTRATION  
  Verbal orders are not allowed  
  Only chemo or specially trained/certified nurses are permitted to administer chemotherapy.  
  Verify route of administration |
| **Opiates/Narcotics**            | Dosage Conversion Guidelines  
  | Current Analgesic | Total Daily Dosage (mg/day) |  |
  | Oral morphine | 60-134 | 135-224 | 225-314 | 315-404 |
  | IM/IV morphine | 10-22 | 23-37 | 38-52 | 53-67 |
  | Oral oxycodone (Percocet, Oxycontin) | 30-67 | 67.5-112 | 112.5-157 | 157.5-202 |
  | Oral codeine | 150-447 | 448-747 | 748-1047 | 1048-1347 |
  | Oral hydrocodone (Vicodin, Lortab, Norco) | 27-54 | - | - | - |
  | IV hydromorphone (Dilaudid) | 1.5-3.4 | 3.5-5.6 | 5.7-7.9 | 8-10 |
  | Oral hydromorphone (Dilaudid) | 8-17 | 17.1-1-28 | 28.1-39 | 39.1-51 |
  | IM/IV meperidine (Demerol) | 75-165 | 166-278 | 279-390 | 391-503 |
  | Oral methadone | 20-44 | 45-74 | 75-104 | 105-134 |
  | Fentanyl patch | 12 or 25 mcg/hr | 50 mcg/hr | 75 mcg/hr | 100 mcg/hr |
| **Pitocin**                      | Use Premix only, per OB protocol  
  Verify frequency and dose – noting that morphine and hydromorphone are not equipotent |
| **Promethazine**                | 50mg formulation can only be administered IM  
  25mg formulation can be administered IV, but must be diluted prior to administration, preferably as an IVPB  
  IV administration is associated with pain, erythema and tissue necrosis if not adequately diluted |