	Policies & Procedures  Title: <b>CHEMOTHERAPY DRUGS FOR NON-CANCER TREATMENT: ADMINISTRATION &amp; PRECAUTIONS</b>  I.D. Number: <b>1180</b>
Authorization  [X] SHR Nursing Practice Committee	Source: Nursing Date Effective: January 28, 2010 Scope: <b>SHR Acute and Long Term Care</b>

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**Note:** In this policy, 'chemotherapy' refers to drugs identified by pharmacy as requiring Chemotherapy Drug Precautions, based on the level of risk they present. Hormonal therapies are not included in this definition.

**Note:** Please review the SHR Region-Wide Policies & Procedures Manual- # 7311-60-020 High Alert Medications - Identification, Double Check and Labeling.

**DEFINITIONS:**

**Antineoplastic** - A chemotherapeutic agent that controls or kills cancer cells. Drugs used in the treatment of cancer that may be cytotoxic but are generally more damaging to dividing cells than to resting cells. However, not all antineoplastic drugs are cytotoxic.

**Biotherapy** - Agents derived from biological sources or agents that affect biologic responses.

**Chemotherapy** - A chemical agent used to treat diseases. The term usually refers to a drug used to treat cancer. However, also prescribed for non-cancer treatment.

**Cytotoxic** - A pharmacologic compound that is detrimental or destructive to cells within the body.

**Hazardous** - Drugs that exhibit one or more of the following six characteristics in humans or animals: carcinogenicity, teratogenicity or other developmental toxicity, reproductive toxicity, organ toxicity at low doses, genotoxicity, structure and toxicity profiles of new drugs that mimic existing drugs determined hazardous by the above criteria. There are various levels of risk within the hazardous drug definition.

**1. PURPOSE**

- 1.1 To safely administer chemotherapy drugs to patients for non-cancer treatment.
- 1.2 To provide a safe environment for staff working with chemotherapy drugs.

## 2. POLICY

- 2.1 Registered and Graduate Nurses, and Registered Psychiatric Nurses (RNs, GNs & RPNs) identified by their manager, will be certified in this Special Nursing Procedure to administer oral, topical, subcutaneous, intramuscular and intravenous chemotherapy drugs for non-cancer treatment in accordance with the policy of the nursing unit.
- 2.2 Employees who are pregnant, attempting to conceive or breastfeeding may refrain from administering chemotherapy drugs upon request. This must be communicated in writing as soon as possible to the Manager of the unit prior to commencement of their shifts.
- 2.3 All orders for chemotherapy drugs must be written by a physician. RNs/GNs **will not accept verbal/telephone orders** for chemotherapy drugs or adjustments to chemotherapy drug doses, except to hold or stop chemotherapy administration. Faxed orders are accepted as written orders.
- 2.4 Pharmacy will identify chemotherapy drugs and some biotherapy drugs on the Medication Administration Record and drug packaging as requiring Drug Precautions.
- 2.5 Pharmacy will prepare all chemotherapy drugs, including oral drugs that must be compounded or crushed, in a biological safety cabinet. The IV bag containing chemotherapy will be spiked and the tubing primed with neutral solution by pharmacy. Injectable chemotherapy will be delivered in a sealed transport bag.
- 2.6 When the physician's order is received, 2 RNs, 1 RN/1 GN, or 1 RN/1 pharmacist will verify the chemotherapy drug dose is correct. Refer to 3.1.

### 2.7 Intravenous Drug Administration

- 2.7.1 2 RNs or 1 RN/1GN who are competent and certified in chemotherapy administration will **independently** calculate the infusion rate, and check the settings on the infusion pump at initial set-up, change of bag and/or change in infusion rate. The initials of both nurses, and time of the double check will be documented on the Medication Administration record (MAR).
- 2.7.2 A closed system for intravenous chemotherapy drug administration will be maintained with a closed male connector. Refer to Appendix B.
- 2.7.3 All chemotherapy infusions will be administered via designated IV tubing.
- 2.7.4 All intravenous chemotherapy drugs must be infused via an infusion pump with the exception of vesicants administered peripherally and drugs ordered IV push.  
  
**Note :** *Administration of IV vesicants peripherally and IV Push are separate special nursing procedures and require additional education and certification.*
- 2.7.5 All chemotherapy infusions will be administered via the secondary port.
- 2.7.6 The primary line will be flushed with a minimum of 25mls of compatible IV solution prior to disconnection and 10 mls between drugs, unless otherwise required for a clinical trial. (PEDIATRICS: Flush Volume 10-20 mls).
- 2.7.7 Blood return must be confirmed prior to administration of a chemotherapy drug. If blood return is absent from a central venous catheter, placement must be confirmed

in medical imaging, and confirmation received from the radiologist that the catheter is correctly placed.

## 2.8 Chemotherapy Drug Precautions

- 2.8.1 Drug Precautions for body waste will be followed for **48 hours** post administration of last chemotherapy dose, regardless of route.
- 2.8.2 A Chemotherapy/Hazardous Drug Spill Kit must be readily available on the unit.
- 2.8.3 Only nursing staff certified in chemotherapy administration may clean up drug spills.

## 3. PROCEDURE

### 3.1 Processing Chemotherapy Orders

- 3.1.1 When the physician order is received, 2 RNs, 1 RN/1 GN, or 1 RN/1 pharmacist complete an **independent double check** of the drug dose. Pre-printed orders are preferred when available.
- 3.1.2 If applicable, complete the mathematical calculation of the dose which may include body surface area (BSA) and dose modifications according to lab results. Refer to Appendix G.
- 3.1.3 If there is more than a 5% variance from the prescribed dose, notify the pharmacist and the ordering physician. Document clarifications and rationale in physician's orders. If changes are required, the physician must write a new order. Refer to 2.3.
- 3.1.4 Verify that the prescribed dose is within the recommended range for the patient, disease indication and treatment plan by referring to the SHR IV Medication Reference Manual, CPS, medication product monograph or other approved reference that describes the chemotherapy drug regimen.
- 3.1.5 Assess chemotherapy orders for completeness including pre and post supportive therapies (e.g. pre-medications, hydration, antiemetics).
- 3.1.6 Both nurses document their initials beside each medication on the physician's orders to indicate that the dose has been verified.

### 3.2 Pre-Administration

- 3.2.1 Review the following patient information:
  - applicable lab results
  - experienced side effects and interventions
  - previous dose adjustments
  - concurrent medical conditions
  - weight changes > 10%
- 3.2.2 Assess the patient's prior experience with chemotherapy (e.g. reactions, delayed side effects, adequacy of symptom management, willingness to proceed). Report to the physician any patient/guardian hesitancy or refusal for treatment.
- 3.2.3 Provide information to the patient and family regarding:
  - indication of chemotherapy

- method of administration
  - potential side effects and complications, and the importance of informing nurses of the same
  - safe handling of drug and body waste
- 3.2.4 Gather appropriate equipment and supplies. Refer to Appendix A.
- 3.2.5 Ensure that a Chemotherapy/Hazardous Spill Kit is available on the unit.
- 3.2.6 Ensure that the patient's room is set up with Chemotherapy Drug Precautions:
- Post a Drug Precautions sign above the patient bed or on the room door. Refer to Appendix C.
  - Affix Drug Precaution labels on the chart, all tubing's exiting patient, specimens and requisitions for specimens, tests and procedures. Refer to Appendix D.
  - Place a Sharps & Fluid Resistant Waste Container and the Soft-Sided Waste Container in the patients room. Refer to Appendix E.
  - Tape the sharps container in the patients room closed and affix the sign alerting staff to dispose of sharps in the Chemotherapy Sharps & Fluid Resistant Waste Container. Refer to Appendix F.
- 3.2.7 Administer pre-medications as ordered.
- 3.2.8 Perform hand hygiene.
- 3.2.9 Don PPE required for route of administration.
- 3.2.10 Immediately before administration, 2 RNs, 1 RN/1GN, 1 RN/1 pharmacist, or 1 RN/1 physician (competent and certified in chemotherapy administration) will verify:
- the order and dosages have been independently double checked and initialed
  - drug names
  - dosages
  - rates
  - volumes
  - expiration dates and times
  - pre-medications
  - solution compatibilities
  - 2 different patient identifiers (e.g. name, date of birth, hospitalization number) on the medication label and the original physician's order

### 3.3 Oral Administration

- 3.3.1 If an anti-emetic is required administer it not less than 30 minutes prior to the administration of oral chemotherapy unless instructed otherwise in the protocol.
- 3.3.2 Tip tablets and capsules from their container/blister pack directly into a disposable medicine cup.
- 3.3.3 Do NOT CUT OR CRUSH chemotherapy tablets or capsules. Tablets/capsules must be swallowed whole. Observe patient consume the drug.

- 3.3.4 If patient is unable to swallow or when administering via a PEG or a nasogastric tube, contact the pharmacist for advice on alternative dose formulations and the physician for a new medical order.

**Note:** To dissolve a tablet or capsule place the medication in a capped "Dissolve-a-Dose" tube and add diluent (sterile water or saline). Securely attach cap and mix gently until medication is dissolved. Open the small outer cap and attach an oral syringe and withdraw the entire contents of the tube. For enteric coated tablets contact pharmacy as above or see next note.

**Note:** To crush a dose that can't be dissolved (ie. coated tablet), place the tablet(s) into an oral syringe and replace the plunger. Draw 0.5-1 ml of water into the syringe to "wet" the tablet. Place a cap on the syringe and turn the plunger with a grinding motion to create a coarse powder. Draw several mls of water into the syringe and let the medication dissolve for several minutes. Shake periodically. Administer.

- 3.3.5 If the patient vomits immediately after ingestion and the tablet or capsule cannot be seen, do not re-administer the dose. Inform the physician for further guidance. Treat vomit as a chemotherapy spill. Refer to 5.1.

- 3.3.6 Dispose of drug packaging and medicine cup in the appropriate waste container.

- 3.3.7 Wash hands with soap and water.

### 3.4 Topical Administration

- 3.4.1 Prepare the area to be treated as ordered.

- 3.4.2 Apply the drug with a sterile tongue blade or cotton tipped applicator to the area to be treated.

- 3.4.3 Ensure the patient understands that the drug is only applied to the specific area to be treated and should avoid contact with eyes, nose, mouth or areas close to mucous membranes unless this is the area to be treated.

- 3.4.4 Ensure you remove immediately all drug from areas not to be treated.

- 3.4.5 Unless contraindicated, consider covering the treated area with a gauze pad to prevent exposure to other areas of the body, clothing, or other people, if the drug is being applied to exposed skin.

- 3.4.6 If applicable, ensure you remove completely the drug on completion of the required contact time.

- 3.4.7 Immediately after the application of the drug, remove PPE and thoroughly wash your hands with soap and water.

### 3.5 Subcutaneous/Intramuscular Administration

- 3.5.1 Do NOT expel air out of syringe. Tap air to the plunger end of the syringe before administering medication.

- 3.5.2 Dispose of needle/syringe in the Sharps & Fluid Resistant Waste Container. See Appendix F.
- 3.5.3 Wash hands with soap and water.
- 3.5.4 Document site of injection on MAR and patient's tolerance of procedure on the nursing flow sheet.

### 3.6 Intermittent Intravenous Administration (Piggy-back)

- 3.6.1 Refer to the SHR IV Reference Manual to determine the hypersensitivity and/or anaphylaxis potential(s) of the drug(s). If drug is known to cause a hypersensitivity or anaphylaxis reaction then:
  - Obtain baseline vitals.
  - Have emergency medications/equipment available in patient's room, if indicated.
  - Attach closed male connector to the end of the primary IV line; this allows for safer disconnection from the IV site in the event of an adverse drug-related reaction. Refer to Appendix B.
  - Follow monitoring requirements for administration.
- 3.6.2 Protect work area with a plastic backed absorbent pad.
- 3.6.3 Prime the primary IV tubing with a compatible additive free solution.
- 3.6.4 Affix a Drug Precaution label to IV tubing.
- 3.6.5 Verify blood return from peripheral IV or central line.
- 3.6.6 At the bedside, before opening the sealed transport bag, verify:
  - The patient's identity with patient's armband and the label on the drug
  - The secondary tubing is securely connected to the IV bag
  - The secondary tubing is clamped
  - There is absence of moisture within the transport bag (i.e. drug leakage)
  - The red cap is on the end of the tubing
- 3.6.7 Swab the secondary port of the primary IV tubing with an alcohol swab; then connect the secondary tubing.
- 3.6.8 Open clamps on secondary tubing.
- 3.6.9 Program IV pump settings as per ordered rate. Complete independent double checks to verify pump settings. Administer drug.
- 3.6.10 Don PPE upon completion of drug administration.
- 3.6.11 Flush the secondary port with 10mls neutral solution if administering additional drugs.
- 3.6.12 Flush the primary IV tubing with 25mls of neutral solution (PEDIATRICS:10-20 mls) prior to disconnection from patient
- 3.6.13 Wipe the port(s) after disconnection with a 2x2 gauze.

3.6.14 Dispose of contaminated IV tubing/syringe in the Sharps & Fluid Resistant Waste Container.

3.6.15 Wash hands with soap and water.

### 3.7 Report to the physician

- Toxicities experienced by the patient
- Adverse reactions
- Assessment of need for a venous access device

### 3.8 Documentation

- Nursing Care Plan: Record start and end times of Drug Precautions
- MAR: Drug administration time and site
- Nurses Notes/Flow sheet: Patient education; patient response to treatment; and condition of intravenous/injection site

### 3.9 Drug Precautions For Body Waste And Supplies

3.9.1 Follow Drug Precautions for body waste for 48 hours post administration of last chemotherapy dose, regardless of route.

3.9.2 When handling blood or body waste, wear a disposable, low-permeable long-sleeved gown and doubled non-sterile nitrile gloves (1 pair under gown cuff; 1 pair over gown cuff). Wear eye/face protection as there is a risk of splashing or aerosolization.

3.9.3 Place Drug Precautions label on the front of the patient's chart and drainage tubes (e.g. urinary drainage catheter bag and catheter, chest tube drainage unit) and specimens and their requisitions.

3.9.4 Use disposable diapers on incontinent children and adults. Dispose in a Soft-Sided Waste Container, or if saturated, in a Sharps & Fluid Resistant waste container. Clean the patient's skin well and apply a barrier cream/ointment to the skin in contact with the diaper to decrease skin irritation.

3.9.5 When disposing of excreta, cover toilet/hopper with a plastic backed absorbent pad with absorbent side down prior to flushing to prevent backsplash. Dispose of the plastic-backed absorbent pad after every use in the Soft-Sided or other appropriate Waste Container.

**Note:** Patient does not require a private bathroom.

3.9.6 Place soiled linens into a plastic laundry bag. No special handling is required if sent to Central Laundry.

3.9.7 Items being returned to SPD for cleaning should be handled in the usual manner (e.g. dressing trays, scissors).

### 3.10 Precautions For Drug Spills, Drug Exposure, And Needlestick Injury

#### 3.10.1 Drug Spills

- 3.10.1.1 Do NOT leave the area of the spill. Have a co-worker bring the Chemotherapy/Hazardous Drug Spill Kit.
- 3.10.1.2 Alert persons in immediate area. Immediately notify the Manager/Supervisor.
- 3.10.1.3 Put on personal protective equipment (PPE) from the spill kit.
- 3.10.1.4 Attend to anyone who has been splashed with the drug. See 3.10.2.
- 3.10.1.5 Contain the spill from the outer edges to the center by placing absorbent towels over the contaminated area.
- 3.10.1.6 Wash area three times, first with the detergent (supplied in kit) followed by water. Dry well with absorbent towel. Follow these same guidelines to clean contaminated equipment.
- 3.10.1.7 Dispose of linen, supplies and waste. Refer to 3.9.
- 3.10.1.8 Remove PPE. Refer to the Infection Prevention & Control Manual 20-150 Personal Protective Equipment (PPE) – Donning and Removing.
- 3.10.1.9 Wash hands well with soap and water.
- 3.10.1.10 Report incident.

### 3.10.2 Drug Exposure

#### 3.10.2.1 **Splash to eyes**

- 3.10.2.1.1 Flush eyes immediately at eyewash station for at least 15 minutes. If eyewash station unavailable, flush with copious amounts of water or normal saline for at least 15 minutes.
- 3.10.2.1.2 Report incident.

#### 3.10.2.2 **Splash to skin (intact or non-intact skin):**

- 3.10.2.2.1 Remove contaminated clothing immediately.
- 3.10.2.2.2 Flush area with copious amounts of water for at least 15 minutes.
- 3.10.2.2.3 Follow with washing area with soap and water.
- 3.10.2.2.4 Report incident.
- 3.10.2.2.5 Launder contaminated clothing at home separately once, then re-wash with regular wash, or arrange for laundry services to launder your uniform for you. If a replacement uniform is not available on your unit, call SPD to arrange pick-up of a decontamination uniform.

#### 3.10.2.3 **Needle stick Injury:**

- 3.10.2.3.1 Express blood from needle puncture site.



- 3.10.2.3.2 Flush puncture site with cool running water for at least 15 minutes.
- 3.10.2.3.3 Apply ice or heat to the injected site, as per SHR IV Reference Manual. Skin punctures with vesicant or irritant drugs will be treated as if an extravasation has occurred.
- 3.10.2.3.4 If needle was contaminated with blood or body fluid, follow SHR guidelines for blood and body fluid exposure. Refer to the Occupational Health & Safety Manual V-2 Bloodborne Pathogen Exposure.
- 3.10.2.3.5 Report incident.

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## Appendix A

Chemotherapy Drug Administration Equipment and Supplies					
	Oral Tablet/ Capsule	Oral Liquid	Topical	IM or SC	IV
<b>Nitrile Gloves (DOUBLED: 1 pair under gown cuff; 1 pair over gown cuff)</b> Small SPD SKU # 61428 Medium SPD SKU # 61429 Large SPD SKU # 61430	X	X	X	X	X
<b>Eye/Face Protection</b> Eye Shield/Mask SPD SKU # 83128 Full Face Shield SPD SKU # 46899		X	X	X	X
<b>Disposable Impervious Gown</b> Main Stores SKU # 123011		X	X	X	X
<b>Chemotherapy/Hazardous Spill Kit</b> SPD SKU # 201903	X	X	X	X	X
<b>Drug Precaution Labels</b> SPD SKU # 211571	X	X	X	X	X
<b>Drug Precautions Sign</b> Printing # 103392	X	X	X	X	X
<b>Sharps &amp; Fluid Resistant Waste Container</b> 8 or 18 Gallon Cart (Unit Purchase) 18 gallon re container SPD SKU #215429 8 gallon red container SPD SKU # 207135 2 gallon red container SPD SKU #121507 4 inch red container SPD SKU #47617 Sign for Cart Printing # 103168	X	X	X	X	X
<b>Sign Alerting Staff to Use the Chemotherapy Sharps &amp; Fluid Resistant Waste Container</b> Printing # 103446	X	X	X	X	X
<b>Soft-Sided Waste Container</b> Linen Hamper (Unit Purchase) Sign for Hamper Printing # 103170 Red Liner Bags Main Stores SKU # 202734	X	X	X	X	X
<b>Transport Waste Container</b> (for soft-sided waste) 18 gallon red container Stores SKU #201905	X	X	X	X	X
<b>Medicine Cup (if necessary)</b>	X				
<b>Plastic-backed Absorbent Liner</b>		X		X	X
<b>2x2 Gauze</b>		X			X
<b>Alcohol Swabs</b>				X	X
<b>Intravenous Infusion Pump</b>					X
<b>ADULTS: IV Pump Tubing with Clave on Secondary Port</b> <b>PEDIATRICS: IV Micro Pump Tubing with Clave on Secondary Port</b>					X
<b>Closed Male Connector</b> Spinning Spiros SPD SKU # 206080 Spiros Sterile Red Cap SPD SKU # 201901					X

**Appendix B**

**Closed Male Connector: SPIROS**

The Spiros™ closed male connector will be attached to all injectable chemotherapy drugs sent from pharmacy to prevent fluid leakage. The Spiros™ remains closed until it is attached to a luer activated needle free connector.



**Drug Precautions Signage**

## **Drug Precautions**

TO BE FOLLOWED FOR **48 HOURS** FOLLOWING  
LAST DOSE OF DRUG.

1. Wear **DOUBLED** non-sterile **nitrile** gloves and disposable impervious **gowns** when handling drug waste and all body waste.
2. Wear **eye/face** protection when there is a risk of **splashing** drug or body waste.
3. Wash hands well before and after client contact.
4. Process all linen in the regular manner (if personal linen/clothing is laundered at the facility, or if linen is soiled, place in plastic bag and label dirty linen with Drug Precautions sticker - staff handling that laundry must wear personal protective equipment-PPE and wash separately from other laundry).
5. Affix the Drug Precautions label on the front of the chart, requisitions, specimens, IV tubing containing the drug, and all tubes exiting from client (i.e. NG, foley catheters, chest tubes, JP drains, etc.).
6. Cover toilet/hopper with a **plastic backed absorbent pad** prior to flushing and **dispose of after use**.
7. All waste contaminated with drug or body waste will be disposed of in either the **Sharps & Fluid Resistant Waste Container for Drug Precautions** OR the **Soft-Sided Waste Container for Drug Precautions**, as appropriate.

Form #103392

**Drug Precautions Label**

### **CAUTION**

#### **Drug Precautions.**

Handle & dispose of contaminated  
drug/body waste appropriately.

STORES SKU # 211571

## Chemotherapy Waste Disposal Containers (RED Bins)

### Soft-Sided Waste Container

**Includes:**

- Drug packaging & drug transport bag
- Disposable gowns, gloves, full face shield
- Drug administration items (i.e. absorbent pads, gauze pads, alcohol swabs, etc.)
- Disposable materials contaminated with body waste (i.e. diapers, absorbent pads, dressings, etc.)
- Body fluid measuring containers



**Red liner bags SKU 202734**

**When bag is 3/4 full  
transfer to red bin.  
RED BAGS MUST BE  
TRANSPORTED IN RED BIN  
FOR DISPOSAL**



**18 gallon SKU 201905**

### Sharps & Fluid Resistant Waste Container

**Includes:**

- IV bag / tubing and syringes
- Needles and other sharps
- Waste Blood Tubes
- Materials saturated with drug
- Foley bag



**4 inch  
SKU #47617**



**2 gallon  
SKU #121507**



**8 gallon  
SKU #207135**



**18 gallon  
SKU #215429**



Tape this sign to  
sharps container  
in patient room

**STOP!**

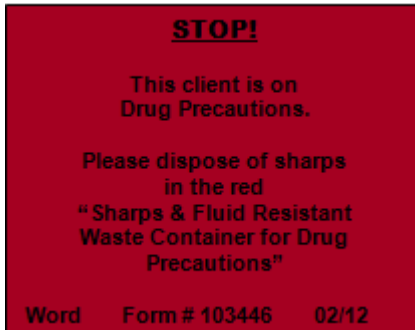
This client is on  
Drug Precautions.

Please dispose of sharps  
in the red  
"Sharps & Fluid Resistant  
Waste Container for Drug  
Precautions"

Word Form # 103446 02/12

**Appendix F:**

**Sign Alerting Staff to Use Sharps & Fluid Resistant Waste Container**



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**Appendix G:**

**Body Surface Area (BSA) Calculation**

1. Obtain and document the patient's actual, not stated, body weight and height
2. Use the formula of Mosteller to calculate the BSA

$$\text{BSA (or m}^2\text{)} = \sqrt{\frac{\text{height(cm)} \times \text{weight(kg)}}{3600}}$$

3. Multiply the BSA by the unit dose that is written on the original order to confirm the correct prescribed dose

**Note:** For pediatric patients weighing less than 10 kg., calculate the dose using mg/kg. BSA should be recalculated to adjust dosing when the actual body weight has changed by greater than 5-10%.