

**KINGSTON HEALTH SCIENCES CENTRE  
KGH SITE**

**CLINICAL POLICY AND PROCEDURE**

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<b>SUBJECT</b>	Administration of Hazardous Drugs for Non-Cancer Treatment Indications	<b>NUMBER</b>	M-1713
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**Introduction :**

Preparing, handling, and administering hazardous drugs and handling of bodily fluids could involve the risk of exposure (see *Administrative Policy 02-095 Workplace Safety Management of Hazardous Drugs*).

Hazardous drugs are considered to be a “high alert” medication by the Institute for Safe Medication Practices Canada (ISMP 2008 Canada) (see *Administrative Policy 14-222 High Risk/High Alert Medications*).

**Definitions:**

**Vesicant** - Medications that can cause blistering of the skin or mucous membranes.

**Extravasation** – A passage or escape into the tissues surrounding the vein that the vesicant is being administered.

**Hazardous Drug** – a hazardous drug is any drug that has the capability of causing toxicity to personnel and others who come in contact with them. Drugs may be classified as hazardous when they possess any one of the following characteristics.

1. Genotoxicity, or the ability to cause a change or mutation in genetic material; a mutagen.
2. Carcinogenic, or the ability to cause cancer in animal models, humans, or both; a carcinogen.
3. Teratogenicity, or the ability to cause birth defects in fetal development or fetal malformation; a teratogen.
4. Fertility impairment in both men and women.
5. Serious toxicity at low doses in experimental animal models or treated patients.
6. Chemical structure and toxicity profile that mimic existing drugs determined to be hazardous by the five previous criteria until properly classified.

**Policy:**

1. Only authorized Registered Nurses (RNs) may administer Chemotherapy & Biotherapy for cancer treatment (see *Nursing Policies A-1250 and M-1710 for the authorization requirements and competency to perform*).
2. Nurses may administer selected hazardous drugs including, but not limited to, azathioprine, cyclophosphamide, ganciclovir, methotrexate and mitoxantrone to treat non-cancer indications. A comprehensive list of hazardous drugs can be found in the Pharmacy Tab on the KHSC Intranet, called *Hazardous Drug List*.
3. Hazardous Drugs are handled, administered, and disposed the following procedure below.
  - 3.1. Vesicants (for example, Mitoxantone) can cause blistering of the skin or mucous membranes if it infiltrates in to the surrounding tissue around the vein.

**Procedure:**

**Refer to Administrative Policy 02-095 regarding Workplace Safety Management of Hazardous Drugs.** This policy outlines the differences when handling various categories of Hazardous drugs.

**Hazardous Drug Categories**

**CATEGORY 1 MEDICATIONS** (labeled as “Hazardous, Category 1” or “Chemotherapy”)  
Cytotoxic Hazardous Medications [mutagenic, genotoxic, carcinogenic]

1. Handling precautions are required for drug preparation, administration and disposal
2. Handling precautions are required for bodily fluids.

**CATEGORY 2 MEDICATIONS** (labeled as “Hazardous, Category 2”)

Non-cytotoxic hazardous medications [may affect the reproductive system (e.g. teratogenic, impaired fertility), endocrine system, immune system, respiratory system, and/or have the potential to transmit infection]

1. Handling precautions are required for drug preparation, administration, and disposal.  
(Safe handling precautions for bodily fluids are **NOT** required for category 2 hazardous drugs)

**REPRODUCTIVE RISK MEDICATIONS**

Medications that are considered hazardous primarily due to adverse reproductive effects are designated as “Reproductive Risk” on the [HDH/KGH Hazardous Drug List](#). This should not be considered to be an all-inclusive listing of drugs that may be of risk to staff who are pregnant, breastfeeding or actively trying to conceive.

1. Since the teratogenic / fetal toxicity potential of many drugs is unknown, staff who are pregnant, breastfeeding or actively trying to conceive may wish to consider handling all drugs using the precautions outlined for **category 2** hazardous drugs.

There are a variety of routes of administration of hazardous drugs. Safety considerations along with policy and procedures must be performed for all routes. This document describes administration procedures for:

- Oral route (Procedure A)
- Subcutaneous/Intramuscular routes (Procedure B)
- Intravenous route (Procedure C)
- Topical route (Procedure D)

*\*Separate procedures for each route\**

**Reporting, Recording And Identifying:**

1. Report:
  - 1.1. Side Effects patient may be experiencing
  - 1.2. Patient/Substitute decision maker hesitancy or refusal of treatment.
2. Record:
  - 2.1. Independent Double Check
  - 2.2. Access device assessment;
  - 2.3. Symptoms and management;
  - 2.4. Agent administration;
  - 2.5. Patient Education;
  - 2.6. Discharge Instructions (as needed); and
  - 2.7. Follow-up care.

3. Identify by (*in-patient setting*):
  - 3.1. Documenting “hazardous” and whether it is considered Category 1 or 2 beside the drug on the Medication Administration Record.
  - 3.2. Documenting “hazardous handling precautions until: \_\_\_\_ (Date) \_\_\_\_\_” for Category 1 drugs on the front page of the Interprofessional Patient Profile and on the sign.
    - 3.2.1. Placing a laminated Hazardous Handling Precautions sign by the patient’s bedside and place a paper copy on the front of the chart.
    - 3.2.2. A copy of the precautions sign must travel with the patient (in chart or on its own) and be added as a precaution when using the electronic portering booking system.
    - 3.2.3. Hazardous Handling Precautions sign is found as an appendix in the Administrative Policy 02-095 regarding Workplace Safety Management of Hazardous Drugs.

**Related Policies and Procedures:**

Administrative Policy 02-095 Workplace Safety Management of Hazardous Drugs  
Administrative Policy 02-015 Personal Protective Equipment (PPE)  
Administrative Policy 14-222 High-Alert Medications  
Nursing Policy A-1250 Clinical Nursing Procedures - Designation, Authorization and Education, and Competency to Perform  
Nursing Policy M-1710 Administration of Chemotherapy and Biotherapy Agents: AC for RNs (only when administered for cancer treatment)

**References:**

Oncology Nursing Society (2014). *Chemotherapy and Biotherapy Guidelines and Recommendations for Practice* (4<sup>th</sup> ed.) Oncology Nursing Society, Publishing Division. Pittsburg, PA.

Cancer Care Ontario (2013). *Safe handling of Cytotoxics*. Cancer Care Ontario: Program in evidence-based care. Accessed online on December 2013 at <https://www.cancercare.on.ca/common/pages/UserFile.aspx?fileId=36706>

College of Nurses of Ontario. (2014). Practice Standard-Medication. Toronto, ON.(author)

ISMP (2014). *ISMP’s list of high-alert medications*. Accessed online January 2015 at <http://www.ismp.org/Tools/highalertmedications.pdf>.

Oncology Nursing Society (2011). *Safe Handling of Hazardous Drugs* (2<sup>nd</sup> ed.) Oncology Nursing Society Publishing Division. Pittsburg, PA.

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Director, Professional Practice – Nursing Signature

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Date

## PROCEDURE A

**Procedure for:** Oral Hazardous Drug Administration

**Equipment:**

Appropriate Personal Protective Equipment (PPE)

- KHSC approved Chemotherapy Gloves (Nitrile) (*change gloves every 30 minutes, or immediately if a tear, puncture or drug spill occurs*)
- Face Shield (*if risk of splashing due to liquid oral preparations, NG,G or J Tube*)
- Chemoprotectant gown, disposable, lint-free made of low-permeability fabric, solid front, long sleeves, tight cuffs, and back closure.

Hazardous Waste bag used for soft waste

Hazardous Drug Patient Information Sheet

**Procedure:**

1. Verify patient care orders.
2. Provide patient with verbal & written information about the drug(s), dose, schedule, storage, & safe handling.
3. Complete an Independent Double Check of the following: (*see also Administrative Policy 14-222 High Alert Medications*)
  - 3.1. Medication
  - 3.2. Dose
  - 3.3. Route
  - 3.4. Frequency
  - 3.5. Time
4. Perform hand hygiene and don appropriate PPE when handling hazardous oral agents.
5. Do not crush hazardous oral agents. Pharmacy crushes all hazardous oral drugs under an externally vented biological safety cabinet (BSC).
  - 5.1. Young children or if patient has difficulty swallowing/feeding tube may require liquid preparations.
6. Immediately prior to administering carry out independent double check of the following:
  - 6.1. Patient's identity using 2 patient-specific identifiers (e.g. name, date of birth, CR#) (*also see Administrative Policy 13-010 Patient Identification*)
7. Administer agents as per patient care order.
8. Dispose of drug packaging and PPE in appropriate waste receptacle.
9. Complete documentation (see Reporting and Recording section of the Policy).

## PROCEDURE B

**Procedure for:** Subcutaneous/Intramuscular (IM) Administration

### **Equipment:**

Appropriate Personal Protective Equipment(PPE)

- KHSC approved Chemotherapy Gloves (Nitrile) (*change gloves every 30 minutes, or immediately if a tear, puncture or drug spill occurs*)
- Face Shield (*if risk of splashing*)
- Chemoprotectant gown, disposable, lint-free made of low-permeability fabric, solid front, long sleeves, tight cuffs, and back closure.

Alcohol swabs

Disposable plastic-backed absorbent pad

4 x 4 gauze

Chemotherapy spill kit

Hazardous drug deactivation agent (*e.g. Surface Safe*)

Hazardous Waste bag used for soft waste

Hazardous Waste Container (*for needles or breakable items*)

Hazardous Drug Patient Information Sheet

Emergency eye wash equipment (*nearby*)

### **Procedure:**

1. Verify patient care orders.
2. Provide patient with verbal & written information about the drug(s), dose, schedule, storage, & safe handling.
3. Complete an Independent Double Check of the following (*see also Administrative Policy 14-222 High-Alert Medications*)
  - 3.1. Medication
  - 3.2. Dose
  - 3.3. Site and/or route
  - 3.4. Frequency
  - 3.5. Time
  - 3.6. Volume
4. Immediately prior to administering carry out independent double check of the following:
  - 4.1. Patient's identity using 2 patient-specific identifiers (e.g. name, date of birth, CR#) (*also see Administrative Policy 13-010 Patient Identification*)
5. Perform hand hygiene and apply appropriate PPE.
6. Select and administer medication in appropriate site.

**Specific Concerns:** For IM injections in infants and children, Appendix C of the KGH/HDH parenteral drug therapy manual will be followed.

  - 6.1. The injection site should be rotated for each injection;
  - 6.2. *Subcutaneous:*
    - 6.2.1. most common site is the abdomen (avoid the umbilicus and scars).
    - 6.2.2. choose smallest needle possible. Some medications are in pre-packaged syringes; follow manufacturer's instructions.
  - 6.3. *Intramuscular:*
    - 6.3.1. Use the proper size needle to ensure that medication is delivered into the muscle and not the SC tissue.

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6.3.2. Insert at 90° angle and pull back on syringe to ensure injection is not near blood vessel.

**NOTE:** Avoid massaging the injection site.

7. Dispose of hazardous waste in appropriate waste receptacle.
8. Complete documentation (see Reporting and Recording section of the policy).

## PROCEDURE C

**Procedure for:** Intravenous Administration

**Equipment:**

Appropriate Personal Protective Equipment (PPE)

- KHSC approved Chemotherapy Gloves (Nitrile) (*change gloves every 30 minutes, or immediately if a tear, puncture or drug spill occurs*)
- Face Shield (*if risk of splashing*)
- Chemoprotectant gown, disposable, lint-free made of low-permeability fabric, solid front, long sleeves, tight cuffs, and back closure.

Alcohol swabs

Disposable plastic-backed absorbent pad

4 x 4 gauze

Chemotherapy spill kit

Hazardous drug deactivation agent (*e.g. Surface Safe*)

Hazardous Waste bag used for soft waste

Hazardous Waste Container (*for needles or breakable items*)

Hazardous Drug Patient Information Sheet

Emergency eye wash equipment (*nearby*)

Agent(s) (*in leak proof, clear, sealable Ziploc bag*)

Compatible IV solutions

**Procedure:**

1. Verify patient care orders.
2. Provide patient with verbal & written information about the drug(s), dose, schedule, storage, & safe handling.
3. Complete an independent double check of the following:  
(*also see Administrative Policy 14-222 High-Alert Medications*):
  - 3.1. medication
  - 3.2. dose
  - 3.3. site or route
  - 3.4. frequency
  - 3.5. duration
  - 3.6. time
  - 3.7. rate
  - 3.8. volume
4. Determine vesicant and irritant potential(s) of drug(s) found in the Parenteral Manual.
  - 4.1. i.e. Vesicants (for example, Mitoxantone) can cause blistering of the skin or mucous membranes if it infiltrates in to the surrounding tissue around the vein.  
See section 6.3 and 12 of this procedure section for more information.
5. Tubing's and syringes with Luer lock fittings or other secure-type connections are used for hazardous drug administration.

6. Determine method of infusion
  - 6.1. Piggy-back (short term): Establish main line with compatible solution and piggyback hazardous drug infusions and those requiring specialized tubing.
    - 6.1.1. Administer agent IV push, allowing main line IV solution to dilute drug.
  - 6.2. Continuous Infusion (24 hours or more): Continuous infusions most commonly use a Central Venous Access Device (CVAD) line or implanted device because of concentration of drug being infused.
  - 6.3. Vesicants:
    - 6.3.1. Avoid infusing vesicants greater than 30 – 60 minutes.
      - 6.3.1.1. Administer vesicants infusing for greater than 30 – 60 minutes through a CVAD.
    - 6.3.2. DO NOT use peripheral IV site for continuous vesicant administration.
7. Perform hand hygiene, don PPE, and use smallest catheter possible to deliver planned therapy.
8. Perform venipuncture, establish IV patency on an existing site or access CVAD as per KHSC policies & procedures. If peripheral IV unsuccessful, a new IV site on opposite arm or proximal to the previous puncture site.
9. Immediately prior to initiating infusion carry out independent double check of the following:
  - 9.1. patient's identity using 2 patient-specific identifiers (e.g. name, date of birth, CR#) (*also see Administrative Policy 13-010 Patient Identification*)
10. Administer agents as per patient care orders.
11. Observe for swelling, burning, tightness, cool skin, skin colour change, and flow rate along with needle dislodgement and leaking of IV fluid.
12. Between administration of each new agent and at completion of infusion:
  - 12.1. assess vein patency
  - 12.2. flush with a minimum amount of ten (10) mL of a compatible IV solution between the administrations of each new drug.
13. For vesicant administration:
  - 13.1. Have extravasation resources available, available from Pharmacy, including:
    - 13.1.1. Extravasation kit at bedside
    - 13.1.2. Management of Vesicant Extravasations (*see HDH/KGH Parenteral Therapy Manual Appendix N*)
  - 13.2. Inspect non-coring needle insertion sites (implanted venous access device) for:
    - 13.2.1. needle dislodgement
    - 13.2.2. leakage of IV fluid
    - 13.2.3. drainage; and/or
    - 13.2.4. edema
  - 13.3. If able, administer vesicant agent first into new, uncompromised vein.
    - 13.3.1. When multiple vesicants are required, administer agent with smallest volume first unless regimen directs which agent to administer first.
  - 13.4. Monitor for extravasations.
    - 13.4.1. For peripheral infusions, monitor site for signs of extravasation every 5 – 10 minutes.
      - 13.4.1.1. Avoid using an IV pump to minimize pressure on vein.
      - 13.4.1.2. Remain with the patient during the entire infusion.



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14. Dispose of contaminated products and PPE in appropriate waste and linen receptacles.
15. Complete documentation (see Reporting and Recording section of the policy).

## PROCEDURE D

**Procedure for:** Topical Administration

**Equipment:**

Appropriate Personal Protective Equipment (PPE)

- KHSC approved Chemotherapy Gloves (Nitrile) –Double gloves are required for topical administration (*change gloves every 30 minutes, or immediately if a tear, puncture or drug spill occurs*)
- Face Shield (*if risk of splashing*)
- Chemoprotectant gown, disposable, lint-free made of low-permeability fabric, solid front, long sleeves, tight cuffs, and back closure.

Plastic-backed absorbent pad

Hazardous Waste bag used for soft waste

Hazardous Drug Patient Information Sheet

**Procedure:**

1. Verify patient care orders.
2. Provide patient with verbal & written information about the drug(s), dose, schedule, storage, & safe handling.
3. Complete an Independent Double Check of the following: (*see also Administrative Policy 14-222 High-Alert Medications*)
  - 3.1. Medication
  - 3.2. Dose
  - 3.3. Route
  - 3.4. Frequency
  - 3.5. Time
  - 3.6. Volume
4. Immediately prior to administering carry out independent double check of the following:
  - 4.1. Patient's identity using 2 patient-specific identifiers (e.g. name, date of birth, CR#) (*also see Administrative Policy 13-010 Patient Identification*)
5. Perform hand hygiene and don appropriate PPE.
6. Place plastic-backed adsorbent pad under specified area.
7. Administer topical medication as per patient care orders.
8. For isolated lesions, cover with gauze to prevent linen and clothing contamination. Clothing and/or linen that comes into contact with topical medication must be handled with PPE and placed into a cytotoxic linen bag.
9. Dispose of drug packaging and PPE in appropriate waste receptacle.
10. Complete documentation (see Reporting and Recording section of the policy).