

 <p>Winnipeg Regional Health Authority Office régional de la santé de Winnipeg Caring for Health À l'écoute de notre santé</p>  <p><b>POLICY</b></p>	Level:  <p style="text-align: center;"><b>REGIONAL</b></p> <p>Applicable to all WRHA governed sites and facilities (including hospitals and personal care homes), and all funded hospitals and personal care homes. All other funded entities are excluded unless set out within a particular Service Purchase Agreement.</p>	1	
	Policy Name: <p style="text-align: center;"><b>Safe Handling of Hazardous Medications (Cytotoxic and Non-Cytotoxic)</b></p>	Policy Number: <p style="text-align: center;">110.160.010</p>	Page: <p style="text-align: center;">1 of 12</p>
	Approval Signature: <p style="text-align: center;"><i>Original signed by M. Sussman</i></p>	Section: <p style="text-align: center;"><b>CLINICAL / PROGRAM SERVICES</b></p>	
	Date: <p style="text-align: center;">October 2015</p>	Supercedes: <p style="text-align: center;">July 2012</p>	

**A joint policy of Winnipeg Regional Health Authority (WRHA) and CancerCare Manitoba (CCMB)**

**1.0 PURPOSE:**

- 1.1 To provide direction and describe safety measures for the receipt, storage, preparation, transport, administration, waste management and spill clean-up of Hazardous Medications within the sites and facilities of both the WRHA and CCMB.
- 1.2 To prevent inadvertent Exposure to Hazardous Medications, related waste and blood and body fluids/excreta containing Hazardous Medications.

**2.0 DEFINITIONS:**

- 2.1 Chemotherapy (Chemo) Gloves: Chemotherapy resistant, at minimum 12 inches in length, powder free gloves that are 7-9 mils (thousandths of an inch) thick, nitrile, polyurethane, neoprene or other materials that meet American Standard Testing Material (ASTM 6978-05) standards for chemotherapy permeation.
- 2.2 Chemotherapy (Chemo) Gown: A disposable, lint-free gown made of a low-permeability fabric, such as polyethylene-coated materials.
- 2.3 Closed System: A commercial system for preparing and administering liquid medication without risk of aerosolization of the product or contamination of the worker and/or their surroundings.
- 2.4 Compromised Dosage Form: Any solid dosage form (tablet or capsule) that is changed in any way; e.g. splitting or crushing a tablet, opening a capsule to empty the powder, preparing a suspension from tablets. For the purposes of this policy all liquid medications (oral, inhalation, and topical; including commercial preparations) and all topical medications are considered compromised dosage forms.

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- 2.5 Cytotoxic Hazardous Medications: Medications which are potentially detrimental or destructive to cells within the body. Cytotoxic Hazardous Medications are a category of Hazardous Medications deemed to pose maximal risk in the event of occupational Exposure. The term is commonly used when referring to antineoplastic medications that non-selectively damage or destroy dividing cells but is not limited to this purpose. This includes all dosage forms and routes of administration (e.g. parenteral, oral, topical, inhalation, etc.).
- A list of WRHA Cytotoxic Hazardous Medications can be found at:  
<http://home.wrha.mb.ca/prog/pharmacy/druginfo.php>
- 2.6 Cytotoxic Spill; Contained: Cytotoxic Hazardous Medication or Cytotoxic Human Waste in an unintended location that is confined in such a manner that it cannot be spread or dispersed (see Appendix B).
- 2.7 Cytotoxic Spill; Uncontained: Cytotoxic Hazardous Medication or Cytotoxic Human Waste in an unintended location not confined within a container or on absorbent material; which exists in such manner that it can be spread or dispersed (Appendix B).
- 2.8 Cytotoxic Spill Kit: An approved kit used to clean up large and/or uncontained Cytotoxic Spills. Contents include: instructions; absorbent material; and protective equipment.
- 2.9 Cytotoxic Symbol:



- 2.10 Cytotoxic Waste:
- **Medication Waste**: Containers, needles, syringes, gloves, pads, empty IV sets and any other disposable supplies or equipment used in the preparation, administration and/or disposal of a Cytotoxic Hazardous Medication.
  - **Human Waste**: Patients' blood and body fluids/excreta including specimens; items used in Patient care (e.g. incontinence products, dressings, urinary catheters and bags); and clothing and linen contaminated with the Patient's blood and body fluids/excreta for 48 hours following completion of the Cytotoxic Hazardous Medication.
- 2.11 Cytotoxic Waste Container: Designated plastic, leak proof, puncture resistant containers labeled with a Cytotoxic Symbol.
- 2.12 Dissolve-and-Dose: A technique where an intact dosage form (e.g. tablet) is dissolved inside a closed container (e.g. syringe) immediately prior to administration. Contact pharmacy for a list of applicable medications and for specific procedures.
- Crush-Dissolve-and-Dose: A technique where an intact dosage form (e.g. tablet) is first crushed inside a closed container (e.g. syringe) and then dissolved immediately prior to administration. Contact pharmacy for a list of applicable medications and for specific procedures.
- 2.13 Examination (Exam) Gloves: Non-sterile disposable medical gloves.
- 2.14 Examination (Exam) Gown: Back-closing, lint-free, long-sleeved gown with tight-fitting cuffs.

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- 2.15 **Exposure:** Refers to the exposure to Hazardous Medications which can occur through various routes, including dermal absorption, absorption through mucous membranes, inadvertent ingestion, inhalation, or injection. It can occur through direct and indirect contact with a Hazardous Medication:
- **Direct Contact:** Contact of Hazardous Medication or Hazardous Medication Waste with skin or mucous membranes, via inhalation, or by injection or with equipment or material contaminated with a Hazardous Medication.
  - **Indirect Contact:** Contact with blood or body fluids/excreta or blood or body fluids/excreta-contaminated items such as bed linens, gloves, objects in Patient's bed space or environment, medical equipment, instruments etc.
- 2.16 **Handling:** Any manipulation of a Hazardous Medication by Staff that may result in Exposure e.g. receipt, storage, preparation, transport, administration, waste management and spill clean-up.
- 2.17 **Hazardous Medications:** Medications 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; or structure and toxicity profiles of new medications that mimic existing medications determined hazardous by the above criteria. For the purposes of this policy, Hazardous Medications are further classified as Cytotoxic Hazardous Medications and Non-cytotoxic Hazardous Medications and include all dosage forms and routes of administration (e.g. parenteral, oral, topical, inhalation, etc).
- 2.18 **N95 Respirator:** Personal protective equipment that is worn on the face, covers the nose and mouth, and is used to reduce the wearer's risk of inhaling hazardous airborne particles (including dust particles and infectious agents), gases or vapours. N95 respirators shall be certified by the National Institute of Occupational Safety and Health (NIOSH) with an N95 efficiency rating or better and require fit testing as directed by Occupational Health.
- 2.19 **Non-cytotoxic Hazardous Medications:** Medications (other than Cytotoxic Hazardous Medications) which are deemed to pose a potential risk in the event of occupational Exposure and require special Handling precautions. This includes all dosage forms and routes of administration (e.g. parenteral, oral, topical, inhalation, etc).
- A list of WRHA Non-cytotoxic Hazardous Medications can be found at:  
<http://home.wrha.mb.ca/prog/pharmacy/druginfo.php>
- 2.20 **Patient:** Any individual receiving health care provided by CCMB or a WRHA facility, site or program regardless of whether they are referred to as a patient, client or resident.
- 2.21 **Personal Protective Equipment (PPE):** Devices and clothing designed to be worn or used for the protection or safety of an individual (e.g. gloves, gowns, masks, shoe covers, protective eyewear, etc.)
- 2.22 **Procedure Mask:** Hypoallergenic, latex or latex-free single-use disposable tissue mask with adjustable nose strip.
- 2.23 **Routine Practices:** Basic infection prevention and control measures expected for the care of all patients, residents, and clients at all times in any healthcare setting.
- 2.24 **Staff:** All persons employed by the WRHA facilities, WRHA funded facilities or CCMB, as well as members of the medical staff, residents, clinical clerks, volunteers, board members, students and others associated through contracts.
- 2.25 **Vesicant:** Any Cytotoxic Hazardous Medication that can cause pain, erythema, swelling, blistering, tissue necrosis, ulceration and/or progressive tissue damage over time.

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### 3.0 **POLICY:**

- 3.1 Sites shall be responsible for informing and training new and existing Staff about the potential hazards related to the risk of Exposure while Handling Hazardous Medications.
- 3.2 The WRHA Hazardous Medication List shall be published by the Pharmacy Safe Work Committee (WRHA, St. Boniface Hospital, and CancerCare Manitoba). Updates shall be provided as new information becomes available or as new drugs are brought into WRHA and CCMB facilities.
- 3.3 The procedures outlined in this Handling of Hazardous Medications (Cytotoxic and Non-Cytotoxic) Policy shall be used in conjunction with, not instead of, Infection Prevention and Control policies, operational directives, protocols, and best practice documents that can prevent or reduce the risk of transmission of microorganisms to health care providers, clients/patients/residents and visitors.  
See Infection Prevention and Control Manuals; Acute Care Manual, Long Term Care Manual and Community Health Services Manual at <http://www.wrha.mb.ca/extranet/ipc/manuals.php>
- 3.4 Appropriate PPE, Cytotoxic Spill Kits, and Cytotoxic Waste Containers shall be available wherever Handling of Cytotoxic Medications occurs.
- 3.5 Risk of Exposure is greatest when Handling Cytotoxic Hazardous Medications and Cytotoxic Medication Waste and to a lesser extent when Handling Human Waste of Patients known to have received a Cytotoxic Hazardous Medication in the last 48 hours. The appropriate PPE shall be worn when Handling Hazardous Medications and Medication Waste and when Handling Cytotoxic Human Waste for the 48 hour time period following Cytotoxic Hazardous Medication administration.
  - Refer to Safe Handling of Medications Chart (Appendix A) and consult appropriate chart: Cytotoxic Hazardous Medications or Non-cytotoxic Hazardous Medications.
- 3.6 Gloves shall be changed at a minimum of every 30 minutes of continuous work with Hazardous Medications and immediately if contaminated or if the integrity of the glove is compromised.
- 3.7 All Injectable Cytotoxic Hazardous Medications shall be prepared by Pharmacy in a Class II Type B biological safety cabinet (BSC) or a negative pressure isolator.  
Exception: Injectable Cytotoxic Hazardous Medications doses may be prepared on patient care areas when demonstrating preparation and administration to patients and their care givers. All Handling instructions outlined in the Safe Handling of Medications Chart (Appendix A) for Cytotoxic Hazardous Medications shall be followed.
  - Each BSC shall be inspected and recertified on an annual basis.
- 3.8 Parenteral Cytotoxic Hazardous Medications shall be stored in pharmacy separately from all other medications in compliance with provincial standards.
- 3.9 All liquid preparations of Cytotoxic Hazardous Medications shall be hand-delivered to Patient care areas (includes all dosage forms; e.g. parenteral, oral, topical, etc.). Delivery via pneumatic tube systems and dietary lifts is not permitted.
  - 3.9.1 Solid dosage forms (tablets or capsules) of Cytotoxic Hazardous Medications may be transported via pneumatic tube systems but shall be appropriately packaged in a sealable plastic bag (e.g. Ziploc® bag).
  - 3.9.2 Designated pharmacy lifts may be used to transport all dosage forms of Cytotoxic Hazardous Medications but shall be appropriately packaged in sealable plastic bag(s) (e.g. Ziploc® bag).
- 3.10 Outpatient prescriptions for Cytotoxic Hazardous Medications should be labeled or marked as "Cytotoxic" with a request to bubble-pack separately if applicable.

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- 3.11 In accordance with the Manitoba Workplace Safety and Health regulations, Staff Handling Hazardous Medications shall discuss with their site Occupational Health Nurse or designate any information regarding pregnancy, breast-feeding or attempt to reproduce in order to discuss risks.
- For additional information refer to Occupational and Environmental Safety and Health Operational Procedure Right to Refuse Dangerous Work at <http://wrha.mb.ca/professionals/safety/files/OPRighttoRefuse2014.02FINAL.pdf> and the Right to Refuse Dangerous Work algorithm at [http://wrha.mb.ca/professionals/safety/files/R\\_to\\_R\\_WIS\\_algorithm2014.02.pdf](http://wrha.mb.ca/professionals/safety/files/R_to_R_WIS_algorithm2014.02.pdf)
- 3.12 All diagnostic specimens and accompanying requisitions from patients receiving Cytotoxic Hazardous Medications and for the 48 hour time period following Cytotoxic Hazardous Medication administration shall be labeled as "Cytotoxic" before being submitted to the appropriate laboratory.
- 3.13 All disposable items used while Handling Cytotoxic Hazardous Medications, regardless of route of administration (e.g. parenteral, oral, inhalation, topical, etc.), are considered Cytotoxic Medication Waste and shall be discarded in a Cytotoxic Waste Container.
- 3.13.1 Cytotoxic Waste Containers should be located as close to point of care as possible (e.g. inside Patient room).
- 3.13.2 Cytotoxic Waste Containers shall be prepared for disposal when three-quarters (3/4) full and not more than approximately 15 kg (35 lb) in weight. Cytotoxic Waste shall not be pushed down into the container to make more room. This practice may increase the risk of Exposure and environmental contamination.
- 3.13.3 Cytotoxic Waste Containers shall have a Cytotoxic label and be sealed prior to collection.
- Exception: Home Care Program shall follow the Home Care Hazardous Medications Guidelines for disposal of Cytotoxic Waste.  
See [http://home.wrha.mb.ca/prog/homecare/manuals\\_hcguide.php](http://home.wrha.mb.ca/prog/homecare/manuals_hcguide.php)
- 3.14 Disposable items used while Handling Cytotoxic Human Waste (including items used in Patient care (e.g. incontinence products, dressings, urinary catheters and bags) shall be discarded in a Cytotoxic Waste Container.
- Exception:
  - Long Term Care facilities please see Procedure 4.20.
  - Home Care Program shall follow the Home Care Hazardous Medications Guidelines for disposal of Cytotoxic Human Waste.  
See [http://home.wrha.mb.ca/prog/homecare/manuals\\_hcguide.php](http://home.wrha.mb.ca/prog/homecare/manuals_hcguide.php)
- 3.15 Site-specific procedures related to disposal of Cytotoxic Waste Containers shall be available at all facilities.
- 3.16 Staff shall respond immediately to a Cytotoxic Spill and effectively control and minimize further contamination of the environment.
- Refer to the Cytotoxic Spill Management Algorithm (Appendix B).
- 3.17 Eyewash equipment shall be available in all areas involved in the Handling of Hazardous Medications.
- 3.18 Staff shall report all Hazardous Medication/Waste Exposure (including Direct and Indirect Contact and skin puncture) to their immediate supervisor. Appropriate site-specific reporting documentation shall be completed (e.g. Patient Safety Event Report, work related injury near miss forms).
- Staff may also file a claim with the Worker's Compensation Board (WCB) to document the Exposure incident in case of a future concern. Complete an *Employee's Report of Injury Form* and send the information to the WCB.  
See <http://www.wcb.mb.ca/how-to-file-a-claim-employers>

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- 3.19 Hazardous Medications and Waste received and transported off site shall be packaged according to Transportation of Dangerous Goods Federal Regulations. See [www.tc.gc.ca](http://www.tc.gc.ca)
- 3.20 Bladder instillation of Hazardous Medication shall be administered as outlined in the WRHA Surgery Program BCG Operative Directive. See <http://home.wrha.mb.ca/prog/surgery/eipt.php>

#### 4.0 **PROCEDURE:**

##### **Preparation**

- 4.1 All Staff shall don appropriate PPE prior to Hazardous Medication preparation.
- Refer to Safe Handling of Medications Chart (Appendix A) and consult appropriate chart: Cytotoxic Hazardous Medications or Non-cytotoxic Hazardous Medications.
- 4.2 All Hazardous Medications prepared by pharmacy shall be labeled and packaged to reflect the hazardous nature of these medications.
- 4.2.1 All Cytotoxic Hazardous Medications shall be labeled as “Cytotoxic”.
- 4.2.2 All Cytotoxic Hazardous Medications shall be transported in sealable plastic bags (e.g. Ziploc® bag).
- Parenteral Cytotoxic Hazardous Medications shall be packaged for transport individually in double sealable plastic bags (e.g. Ziploc® bags).
- 4.2.3 Non-cytotoxic Hazardous Medications shall be labeled with “Wear Gloves” and “Do Not Crush” (if appropriate to the dosage form).
- 4.3 Parenteral infusion bags containing Cytotoxic Hazardous Medications shall have tubing sets attached and primed by pharmacy with a solution not containing the Cytotoxic Hazardous Medication and shall be sealed with a dead end device.  
Exception: Pediatric preparations
- 4.4 Syringes containing Cytotoxic Hazardous Medications shall be sealed by pharmacy with a dead-end device.
- 4.5 Waste generated from the preparation of Cytotoxic Hazardous Medication shall be discarded in the appropriate Cytotoxic Waste Container.
- 4.6 If a vendor delivers damaged Cytotoxic Hazardous Medication packages, the receiver shall don PPE and segregate (may place into another container or in a separate area) or dispose of the damaged package and inform the vendor of the status of the damaged package.

##### **Administration in Patient Care Area**

- 4.7 All Staff shall don appropriate PPE prior to Hazardous Medication administration.
- Refer to Safe Handling of Medications Chart (Appendix A) and consult appropriate chart: Cytotoxic Hazardous Medications or Non-cytotoxic Hazardous Medications.
- 4.8 A Cytotoxic Symbol shall be posted in the administration area and on the Patient chart and kardex or care plan during the administration and for 48 hours after the end of administration of Cytotoxic Hazardous Medications (includes all routes; e.g. parenteral, oral, inhalation, topical, etc.).
- 4.9 Once a Cytotoxic Hazardous Medication is removed from the sealable plastic bags (e.g. Ziploc® bags) all manipulations of infusion bags/tubing/syringes shall take place on a plastic-lined absorbent pad with the absorbent side up.
- 4.10 Infusion bags containing Cytotoxic Hazardous Medications shall not be spiked at the Patient bedside.
- 4.11 Following an infusion of Cytotoxic Hazardous Medication using a secondary set, the infusion line shall be flushed with a plain IV solution to ensure it is clear of all Cytotoxic Hazardous Medication before disconnecting.

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- 4.12 When disconnecting syringe/IV line, a 2X2 inch gauze/alcohol pad shall be used to absorb any droplets of Cytotoxic Hazardous Medication and then disposed of in a Cytotoxic Waste Container.
- 4.13 Transport of Patients:
- 4.13.1 Transport Staff and the receiving department shall be notified when a Patient is under Cytotoxic precautions.
- 4.13.2 Transport of Patients with Cytotoxic Hazardous Medications infusing out of their Patient care area should be avoided. If the reason for transport is essential, a Cytotoxic Spill Kit and Staff trained in Cytotoxic Spill management shall accompany the Patient.
- 4.13.3 Patients should not be transferred between facilities with Cytotoxic Hazardous Medications infusing. If the need for inter-facility transport is essential, the Cytotoxic Hazardous Medication should be interrupted or discontinued.
- 4.14 Cytotoxic Hazardous Medications that are discontinued or temporarily stopped partway through administration shall have the tubing clamped and/or a dead-end device applied. Storage of interrupted Cytotoxic Hazardous Medication infusions should be discussed with the pharmacy if necessary.
- Cytotoxic Hazardous Medication infusions that are not resumed shall be sealed (e.g. dead-end capped, sealable plastic bag, etc.) and discarded in a Cytotoxic Waste Container.
- 4.15 Hazardous Medication tablets or capsules shall not be split or crushed in a Patient care area prior to administration due to the risk of Exposure and environmental contamination. Contact pharmacy for assistance and recommendations.

### **Waste Handling**

- 4.16 Safe Handling precautions of Cytotoxic Human Waste shall be followed during administration period and for 48 hours after the last dose of Cytotoxic Hazardous Medication regardless of route of administration (e.g. parenteral, oral, inhalation, topical, etc.).
- Refer to Safe Handling of Medications Chart (Appendix A) and consult appropriate chart: Cytotoxic Hazardous Medications or Non-cytotoxic Hazardous Medications.
- 4.17 Contaminated laundry items shall be bagged at the point of care in a waterproof laundry bag (plastic bag) and sent to laundry service or home for cleaning as per site-specific practice.
- Laundry bags shall be sealed for transport to laundry service or home immediately after use to prevent access by other Staff or care givers.
- 4.18 Toilets shall be covered before flushing after use by Patients under Cytotoxic Hazardous Medications Handling precautions.
- In areas without toilet lids, the bowl shall be covered with a disposable plastic-lined pad prior to flushing. The pad shall be disposed in a Cytotoxic Waste Container. Long Term Care facilities please see Procedure 4.20.
- 4.19 Non-disposable items that come in contact with Cytotoxic Hazardous Medications, Cytotoxic Medication Waste or Cytotoxic Human Waste shall be washed with a non-antiseptic detergent or soap solution (e.g. dishwashing or hand soap) and rinsed with copious amounts of water while wearing Chemo Gloves. Electric equipment shall be wiped down thoroughly; first with a damp cloth and then disinfected using site-specific Routine Practices.
- 4.20 Long Term Care facilities are regarded as Patients' place of residence. The disposal of Patient Cytotoxic Human Waste, including disposable items used for Patient care (e.g. incontinence products, gloves) may be discarded in general waste.

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### Spill and Exposure Management

- 4.21 Following all Hazardous Medication Exposures, Direct or Indirect, Staff shall immediately take the following precautions, as appropriate:
- **Eyes** - Flush affected eye(s) with copious amounts of clean water or normal saline for a minimum of 15 minutes.
  - **Skin** - Remove contaminated clothing immediately. Wash affected area with soap and running water for a minimum of 15 minutes.
  - **Skin Puncture** - Wash puncture site thoroughly with soap and running water for a minimum of 15 minutes. Squeeze puncture site to encourage bleeding.
    - In the event of Exposure with a Hazardous Medication that is a Vesicant; treat as an extravasation as per site specific policy.
- 4.22 Refer to Spill Management Algorithm (Appendix B).

### 5.0 REFERENCES:

- 5.1 American Society of Health-System Pharmacists. (2006). ASHP guidelines on Handling hazardous drugs. *American Journal of Health-System Pharmacists*, (63), 1172-1193.
- 5.2 Connor, T. (2006). *Personal protective equipment for use in Handling hazardous drugs*. Cincinnati, Ohio: National Institute for Occupational Safety and Health (NIOSH).
- 5.3 Easty, A., Coakley, R., Cheng, R., Cividino, M., Savage, P., Tozer, R., et al. (2013). *Safe Handling of cytotoxics* No. 16-3). Toronto, ON: CancerCare Ontario.
- 5.4 Easty, A. C., Coakley, N., Cheng, R., Cividino, M., Savage, P., Tozer, R., et al. (2015). *Safe Handling of cytotoxics: Guideline recommendations*.
- 5.5 *Guidelines for the Handling and disposal of hazardous pharmaceuticals (including cytotoxic drugs)*. (2000). Canada: CSHP Official Publications.
- 5.6 *Hazardous drug safe Handling standards V-10*(2013). (4th ed.). British Columbia: British Columbia Cancer Agency.
- 5.7 *Hazardous drug spill management V-30*(2013). . British Columbia: British Columbia Cancer Agency.
- 5.8 Jacobson, J. O., Polovich, M., McNiff, K. K., LeFebvre, K. B., Cummings, C., Galioto, M., et al. (2009). *American society of clinical Oncology/Oncology nursing society chemotherapy administration safety standards*.
- 5.9 Lester, J. (2012). *Safe Handling and administration considerations of oral anticancer agents in the clinical and home setting*.
- 5.10 *Manitoba workplace safety and health act W210 – Manitoba workplace safety and health regulations 217/2006 part 2: General duties: Pregnant or nursing workers*. (2006). Winnipeg, MB: Government of Manitoba.
- 5.11 *NIOSH alert: Preventing occupational exposures to antineoplastic and other hazardous drugs in Health care settings* (2004). Cincinnati, OH: Department of Health and Human Services.
- 5.12 Polovich, M. (Ed.). (2011). *Safe Handling of hazardous drugs* (2nd ed.). Pittsburgh, PA: Oncology Nursing Society.
- 5.13 Polovich, M., Olsen, M., & LeFebvre, K. (Eds.). (2014). *Chemotherapy and biotherapy guidelines and recommendations for practice* (4th ed.). Pittsburgh, Pennsylvania: Oncology Nursing Society.
- 5.14 *Prevention guide: Safe Handling of hazardous drugs* (2008). Montreal, QC: ASSTSAS.
- 5.15 *QuapoS 3-quality standard for the oncology pharmacy service with commentary*(2003). Institute for Applied Healthcare Sciences (IFAHS e.V.), for the German Society of Oncology Pharmacy (DGOP e.V.).
- 5.16 Ramphal, R., Bains, T., Vaillancourt, R., Osmond, M. H., & Barrowman, N. (2014). *Occupational exposure to cyclophosphamide in nurses at a single center*.

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- 5.17 *Right to refuse dangerous work* (2014). (5th ed.). Winnipeg Manitoba: Winnipeg Regional Health Authority.
- 5.18 *Safe Handling of cytotoxic Drugs/Waste CC 05-055*. (2011). (2011th ed.). Nova Scotia: CancerCare Nova Scotia.
- 5.19 *Standards and competencies for cancer chemotherapy nursing practice*. (2011). Canada: Canadian Association Of Nurses in Oncology (CANO/ACIO).
- 5.20 *Standards of practice for oncology pharmacy in Canada* (2004). (1st ed.) Canadian Association for Pharmacy in Oncology (CAPHO).

## 6.0 **RESOURCES:**

- 6.1 HSC Practice Guideline 80.120.741: CYTOTOXIC HAZARDOUS MEDICATION (INTRAVENOUS CHEMOTHERAPY): ADMINISTRATION  
See <http://hsc.home.hsc.mb.ca/policies/policydetail.asp?polyid=4514>
- 6.2 WRHA Surgery Program BCG Operative Directive.  
See <http://home.wrha.mb.ca/prog/surgery/eipt.php>
- 6.3 HSC Patient Information Sheet: Safe Management of Chemotherapy Medications in the Home (Form # EB-00051). See  
[http://hsc.home.hsc.mb.ca/NursingEducationProgram/documents/FrontPageItems/TeachLearnResources/Patient%20Education/Chemotherapy\\_meds\\_infosheet.pdf](http://hsc.home.hsc.mb.ca/NursingEducationProgram/documents/FrontPageItems/TeachLearnResources/Patient%20Education/Chemotherapy_meds_infosheet.pdf)
- 6.4 CCMB Safe Management of Chemotherapy in the Home
- 6.5 Home Care Cytotoxic and Non-Cytotoxic Hazardous Medications Guidelines  
See [http://home.wrha.mb.ca/prog/homecare/manuals\\_hcguide.php](http://home.wrha.mb.ca/prog/homecare/manuals_hcguide.php)
- 6.7 Infection Prevention and Control Manuals; Acute Care Manual, Long Term Care Manual and Community Health Services Manual  
See <http://www.wrha.mb.ca/extranet/ipc/manuals.php>
- 6.8 WRHA Hazardous Medications List. See  
<http://home.wrha.mb.ca/prog/pharmacy/druginfo.php>

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Appendix A

**SAFE HANDLING OF HAZARDOUS MEDICATIONS CHART**

**MEDICATION  
ADMINISTRATION  
& PATIENT CARE**

Precautions	CYTOTOXIC HAZARDOUS MEDICATIONS			NON-CYTOTOXIC HAZARDOUS MEDICATIONS		
	Injectable	Solid Oral Dosage Form	Compromised Dosage Form	Injectable	Solid Oral Dosage Form	Compromised Dosage Form
<b>Administration and Medication Waste Management</b>						
Administration Precautions	<b>Required</b> Chemo Gloves Chemo Gown  <b>Recommended<sup>1</sup></b> Face Shield	<b>Required</b> Chemo Gloves  <b>DO NOT CRUSH</b> Contact pharmacy for recommendations if Patient unable to swallow solid oral form	<b>Required</b> Chemo Gloves  <b>Recommended<sup>2</sup></b> Chemo Gown Face Shield  <b>DO NOT CRUSH</b>	Exam Gloves	Exam Gloves  <b>DO NOT CRUSH</b> Contact pharmacy for recommendations if Patient unable to swallow solid oral form	Exam Gloves  <b>DO NOT CRUSH</b>
Medication Waste Management	<b>Required</b> Chemo Gloves Chemo Gown  <b>Recommended<sup>1</sup></b> Face Shield	<b>Required</b> Chemo Gloves	<b>Required</b> Chemo Gloves  <b>Recommended<sup>2</sup></b> Chemo Gown Face Shield	Exam Gloves	Exam Gloves	Exam Gloves
<b>Human Waste Management</b>						
Human Waste Management	<b>Required</b> Chemo Gloves  <b>Recommended<sup>1</sup></b> Chemo Gown Face Shield	<b>Required</b> Chemo Gloves  <b>Recommended<sup>1</sup></b> Chemo Gown Face Shield	<b>Required</b> Chemo Gloves  <b>Recommended<sup>1</sup></b> Chemo Gown Face Shield	Routine Practices	Routine Practices	Routine Practices
	<b>Ensure all diagnostic specimens are labeled as Cytotoxic</b>					
<b>Spill Management</b>						
	REFER TO SPILL MANAGEMENT ALGORITHM (Appendix B)			<b>Required</b> Chemo Gloves, <b>Recommended<sup>1</sup></b> Chemo Gown Face Shield	<b>Required</b> Chemo Gloves, <b>Recommended<sup>1</sup></b> Chemo Gown Face Shield	<b>Required</b> Chemo Gloves, <b>Recommended<sup>1</sup></b> Chemo Gown Face Shield

1 Chemo Gowns, Face/Eye Protection & Shoe covers should be worn whenever there is potential for splashing.

2 Chemo Gowns are highly recommended when administering liquid medication due to potential for splashing.

# Appendix A

# SAFE HANDLING OF HAZARDOUS MEDICATIONS CHART

MEDICATION PREPARATION	CYTOTOXIC HAZARDOUS MEDICATIONS			NON-CYTOTOXIC HAZARDOUS MEDICATIONS		
	Precautions	Injectable	Solid Oral Dosage Form	Compromised Dosage Form	Injectable	Solid Oral Dosage Form
<b>Receiving</b>						
Protective wear (unpacking stock from warehouse, manufacturer, external pharmacy)	Exam Gloves	Exam Gloves	Exam Gloves	No special requirements	No special requirements	No special requirements
Protective wear - receiving stock that is damaged (contents confirmed with packing slip)	Chemo Gloves Procedure Mask Chemo Gown	Chemo Gloves Procedure Mask Chemo Gown	Chemo Gloves Procedure Mask Chemo Gown	Exam Gloves Procedure Mask Exam Gown	Exam Gloves Procedure Mask Exam Gown	Exam Gloves Procedure Mask Exam Gown
<b>Preparation &amp; Transport*</b>						
Prepared by	Pharmacy	Pharmacy	Pharmacy Except Dissolve & Dose	Nurse (or Pharmacy for specified medications)	Pharmacy	Pharmacy Except Dissolve & Dose
Preparation area	Class II biological safety cabinet or alternate closed system	Designated cytotoxic packaging area	Designated cytotoxic packaging area	Ward or Pharmacy	Designated cytotoxic packaging area	Designated cytotoxic packaging area
Protective wear (for Staff preparing the area)	Chemo Gloves Shoe Covers	None	None	None	None	None
Protective wear (for Staff preparing medication doses)	Double Gloves (inner is Chemo Glove) Procedure Mask Chemo Gown Shoe Covers	Chemo Gloves	Double Gloves (inner is Chemo Glove) Procedure Mask Chemo Gown	Sterile Gloves (Pharmacy) Exam Gloves (Nursing)	Exam Gloves	Chemo Gloves Procedure Mask Exam Gown
Packaging requirements (by Pharmacy for doses)	Each dose packaged separately	Unit-dose	ORAL Unit-dose	No special requirements	Unit-dose	SOLIDS Unit-dose LIQUIDS Unit-dose or Multi-dose
Labeling requirements (for use in Patient care area)				WEAR GLOVES	WEAR GLOVES DO NOT CRUSH	WEAR GLOVES DO NOT CRUSH
Packaging for transport (to Patient care area, other pharmacy area, external pharmacy)	Double Sealed Container (e.g. Ziploc® bags)	Sealed Container (e.g. Ziploc® bags)	Sealed Container (e.g. Ziploc® bags)	No special requirements	No special requirements	No special requirements
Clean-up protective wear	Double Gloves (inner is Chemo Glove) N95 Mask Protective Eye Wear Chemo Gown Shoe Covers	Chemo Gloves	Chemo Gloves Procedure Mask Chemo Gown	Exam Gloves	Exam Gloves	Chemo Gloves Procedure Mask Exam Gown

\*for complete information on safe preparation of Hazardous Medications consult Pharmacy Safe Handling of Hazardous Medications Directive - # 900.08:60  
 - see [http://home.wrha.mb.ca/prog/pharmacy/files/Dir\\_900\\_08\\_60\\_Safe\\_Handling.pdf](http://home.wrha.mb.ca/prog/pharmacy/files/Dir_900_08_60_Safe_Handling.pdf)

## Cytotoxic Spill Management Algorithm - Appendix B

Determine size of Cytotoxic Spill and ability to contain. If unsure, use spill kit

Small/Easily Contained  
Cytotoxic Spill less than 100 mL

Gather Equipment:

- Chemo Gown
- 1 pair Chemo Gloves
- 1 pair Exam Gloves
- Procedure Mask
- Plastic-lined absorbent pads (e.g. blue pads)
- Non-antiseptic detergent or soap and paper towels
- Cytotoxic Waste Container

Large Contained/Uncontained  
Cytotoxic Spill more than 100 mL;  
powdered Cytotoxic Hazardous  
Medication; Cytotoxic Spills  
involving glass

Gather Equipment:

- Cytotoxic Spill Kit
- Non-antiseptic detergent or soap and paper towels
- Cytotoxic Waste Container

Cytotoxic Spills more than 5 kg/5 L  
OR smaller amounts that cannot  
be safely managed with available  
resources

INITIATE CODE BROWN

### Tablet/Capsule Spills

- Don PPE: Chemo Gloves; Chemo Gown and shoe covers if potential for contact with contaminated surface.
- Use moistened absorbent material (e.g. paper towel) to pick up tablets/capsules; place in Cytotoxic Waste Container.
- Wash affected surface with non-antiseptic detergent or soap, rinse with clean water using paper towels. Repeat this process a total of 3 times.
- Use plastic-lined pads to dry area; place in Cytotoxic Waste Container.
- Dispose of all materials and PPE in the Cytotoxic Waste Container.
- Wash hands thoroughly with soap and water.

**NOTE: If tablets become crushed or the number of tablets spilled cannot be picked up with paper towel (i.e. require scoop), use a Cytotoxic Spill Kit, appropriate PPE and follow directions to the right.**

### Procedure:

- Limit access to the area of the spill, using spill kit signage if applicable.
- Don PPE: Chemo Gown, double gloves - inner pair shall be Chemo Gloves worn under the gown cuff, outer pair shall be exam gloves worn over gown cuffs, shoe covers, face and eye protection if risk of splash, N95 respirator for powders (including crushed tablets).
- If required, wait for aerosols to settle.
- Contain spill:
  - Liquids on hard surfaces: gently cover with absorbent pads, plastic side up, being careful not to create aerosolization.
  - Liquids on absorbent surfaces: cover contaminated area with absorbent powder from spill kit. When all liquid absorbed, use scoop to collect saturated powder; place in Cytotoxic Waste Container.
  - Solids/powders: use moistened absorbent material (e.g. paper towel) to pick up; place in Cytotoxic Waste Container.
  - Sharps: Pick up any sharp or broken objects using scoop (do not use hands); place in Cytotoxic Waste Container.
- Wash affected surface AND any non-disposable items with non-antiseptic detergent or soap, rinse with clean water using paper towels. Repeat this process a total of 3 times.
- Use plastic-lined pads to dry area; place in Cytotoxic Waste Container.
- Dispose of all materials and PPE in the Cytotoxic Waste Container.
- Contaminated personally owned items shall be placed separately from other items in a waterproof laundry bag to be sent home for cleaning. (Do not dry clean).
- Contaminated linen shall be placed in a waterproof laundry bag that can be closed securely and sent to laundry services.
- Wash hands thoroughly with soap and water.
- Contact housekeeping for terminal cleaning.
- Complete Patient or Staff Safety Event Report