

SAFE HANDLING OF HAZARDOUS MEDICATIONS

Cytotoxic and Non-Cytotoxic

Winnipeg Regional Health Authority Policy # 110.160.010



By the end of this presentation staff should be able to



1. Understand what information is in the new Safe Handling of Hazardous Medications Policy.
2. Define what a Hazardous Medication is and what some of the risks of occupational exposure are.



By the end of this presentation staff should be able to



3. Use the definitions and the charts in the policy to determine:
 - the classification of the Hazardous Medication
 - the dosage form of the Hazardous Medication
 - how that impacts the handling precautions required to minimize occupational exposure.
4. Identify the steps to be taken when exposed to Hazardous Medication or when a Cytotoxic Spill occurs.



Safe Handling of Hazardous Medications Policy

- To provide direction and describe safety measures for the receipt, storage, preparation, transport, administration, spill clean up and waste management of Hazardous Medications.



Who Does This Safe Handling Policy Apply To?

- **ALL** employees providing direct care to patients receiving Hazardous Medications (nursing assistants, nurses, physicians, physiotherapy, etc.).
- **ALL** employees handling or transporting medication, waste or soiled equipment (e.g. housekeeping, laundry, transport, pharmacy, shipping and receiving, etc.).



Safe Handling of Hazardous Medications Policy Will Assist Staff To

1. Define cytotoxic and non-cytotoxic hazardous medications.
2. Recognize & prevent potential risks and conditions for exposure to potentially hazardous medications.
3. Determine appropriate precautions for safe handling of potentially cytotoxic and non-cytotoxic hazardous medications and associated waste.
4. Classify and manage a cytotoxic spill.



Safe Handling of Hazardous Medications Policy

- A copy of the complete ***Safe Handling of Hazardous Medications Policy*** can be found on the Medication Quality and Safety Committee page on WRHA INSITE page.

<http://home.wrha.mb.ca/prog/medquality/policies.php>



What Are Hazardous Medications?

- Medications that are known or suspected to cause adverse health effects from exposures in the workplace.
- They include:
 - antineoplastic and chemotherapy medications used for cancer and other diseases
 - medications to treat auto immune diseases like arthritis
 - antiviral medications, hormones, some bioengineered medication & other miscellaneous medications.



What Are the *Potential* Risks to Health Care Workers?

Working with or near hazardous medications in health care settings can **potentially** cause:

- Skin rashes
- Infertility
- Miscarriage
- Birth defects
- Organ toxicities
- Leukemia or other cancers



How Do Staff Come in Contact With Hazardous Medications?

Direct contact

Primary physical contact with a hazardous medication during preparation or administration or when managing a hazardous medication spill.

Indirect Contact

Secondary contact with a hazardous medication from body fluids, bed linens, medical equipment, etc.



Direct or Indirect?

1. Touching measurable concentrations of medications present on drug vial exteriors, work surfaces, floors, and final medication products?
2. Changing the diaper of a baby receiving cytotoxic medication for leukemia?



What Can You Do to Protect Yourself?



C.H.O.I.C.E

C.H.O.I.C.E is an easy to remember acronym to help staff remember the necessary steps needed to minimize exposure to hazardous medications.



C.H.O.I.C.E

- C** Is the medication Cytotoxic?
- H** Is the medication non-cytotoxic
Hazardous?
- O** Is it a solid Oral intact dosage form?
- I** Is it an Injectable or Instillation
dosage form?
- C** Is it a Compromised dosage form?
- E** What Effect will this information
have?



"C"

- Is the medication that I'm handling Cytotoxic?



"H"

- Is the medication non-cytotoxic
Hazardous?

WEAR GLOVES

**WEAR GLOVES
DO NOT CRUSH**



Cytotoxic & Non-cytotoxic Hazardous

Cytotoxic

- Medications that are potentially detrimental or destructive to cells within the body.
- Deemed to pose maximal risk in the event of occupational exposure.

Non-Cytotoxic

- 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



Cytotoxic & Non-cytotoxic Hazardous

CYTOTOXIC and NON-CYTOTOXIC HAZARDOUS MEDICATIONS¹

CYTOTOXIC HAZARDOUS MEDICATIONS		NON-CYTOTOXIC HAZARDOUS MEDICATIONS	
Altretamine	IDArubicin	Acitretin	Iloprost
Amsacrine	Ifosfamide	Aldesleukin	Imatinib ³
Arsenic	Irinotecan	Alitretinoin	Interferons
Asparaginase	Lenalidomide	Anastrozole ³	ISOTretinoin
azaCITIDine	Lomustine	Ambrisentan	Leflunomide ³
azaTHIOprine ³	Mechlorethamine	Bacillus Calmette Guerin ² (bladder instillation only)	Letrozole ³
Bleomycin	Melphalan	Bexarotene	Leuprolide
Bortezomib	Mercaptopurine	Bicalutamide ³	Megestrol ³
Busulfan ³	Methotrexate	Bosentan	Methacholine
Capecitabine ³	MitoMYcin	Buserelin	MethylTESTOSTERone
CARBOplatin	MitoXANtrone	Cetrorelix	Mifepristone
Carmustine	Nelarabine	Choriogonadotropin alfa	Misoprostol
Chlorambucil	Oxaliplatin	Cidofovir	Mitotane
CISplatin	PACLitaxel	ClomiPHENE	Mycophenolate mofetil
Cladribine	Pegasparaginase	Colchicine ³	Nafarelin
Clofarabine	PEMEtrexed	cycloSPORINE	Nilutamide ³
Cyclophosphamide	Pentostatin	Cyproterone	Oxandrolone ³
Cytarabine	Procarbazine ³	Dienestrol	Pentamidine (Aerosol only)
Dacarbazine	Raltitrexed		Podofilox



Cytotoxic & Non-cytotoxic Hazardous

- A copy of the complete ***Cytotoxic and Non-cytotoxic Hazardous Medications Chart*** can be found in the policy and as a separate copy on the Medication Quality and Safety Committee page on WRHA INSITE page.

<http://home.wrha.mb.ca/prog/medquality/policies.php>



Cytotoxic & Non-cytotoxic Hazardous

- azaTHIOprine
- cycloSPORINE
- Misoprostol
- Ganciclovir
- Melphalan
- Finasteride
- VinCRIStine
- Colchicine

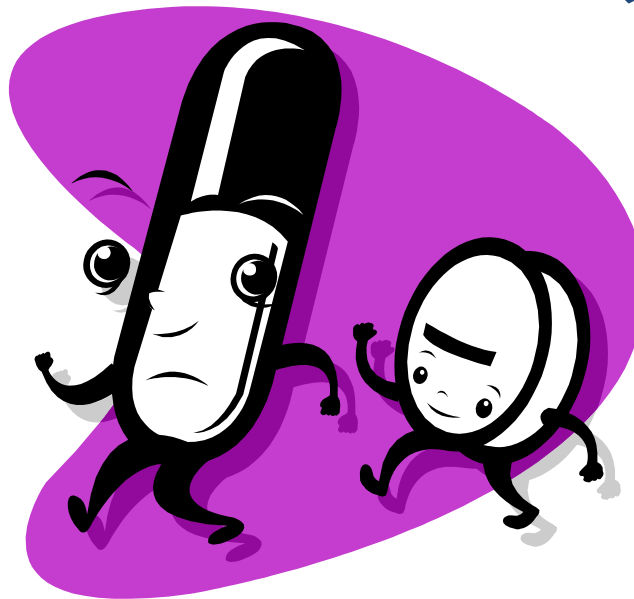


"O"

- Is it a solid Oral intact dosage form?

Intact (Unopened)
Capsules

Whole Tablets



"O"

- If a solid Oral intact dosage form is not appropriate for administration to your patient (can not swallow tablet, medication is administered through a feeding tube, etc.) – DO NOT CRUSH TABLET or OPEN CAPSULE
- Contact pharmacy for assistance.





- Is it an Injectable dosage form or a dosage form that will be Instilled into a body cavity?

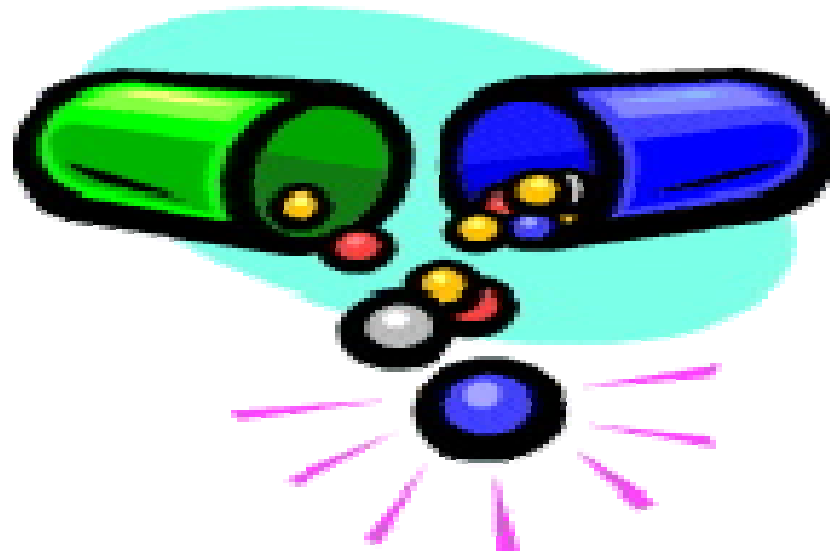


IV, IM, subcut, IT, bladder instillation etc.



"C"

- Is it a Compromised dosage form?



"C"

- Pharmacy will purchase or prepare a liquid dosage form if required for your patient.
- If this is not available, they may suggest the Dissolve-and-Dose or Crush-Dissolve-and-Dose method of medication administration.
- Contact pharmacy for full instructions on using this method and to ensure that the medication can be administered in this manner.



Have you seen?



If you receive a liquid hazardous* (cytotoxic or non-cytotoxic) oral medication from Pharmacy, it is usually prepared as unit doses in blue and white oral syringes marked as oral-use only. This is so the medication does not require further manipulation.



For non-cytotoxic medications, follow the instructions to

WEAR GLOVES

Cytotoxic medications will be labelled as:



For all cytotoxic medications, don "chemotherapy gloves".



If your patient can take medications orally, administer the medication directly from the syringe. *Do not transfer* the medication into a cup or any other container. Patients who touch the syringe or medication should wash their hands afterwards.



If your patient has an enteral access device, *do not transfer* the medication into a different syringe. Add an adaptor to the oral syringe. Depending on the enteral device, you may need only the:

1. "Enteral Adaptor nasal gastric tube" (red) (Available from pharmacy)

or

2. The red enteral adaptor and an additional "Catheter adaptor"



Dispose of the syringe and all adaptors after one use into the appropriate container. For cytotoxic medication, use a red Cytotoxic Waste Container*.

*See revised WRHA policy: *The Safe Handling of Hazardous Medications (Cytotoxic and Non-Cytotoxic)* Policy # 110.160.010)



"E"

- What Effect will this information have?



SAFE HANDLING OF MEDICATIONS CHART*



CYTOTOXIC HAZARDOUS MEDICATIONS

Precautions	Injectable	Solid Oral Dosage Form	Compromised Dosage Form
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Administration & Disposal¹

Administration restrictions	REFER TO SITE-SPECIFIC POLICIES		
Administration precautions	Chemo Gloves required Procedure Mask/Chemo Gown recommended	Chemo Gloves	Chemo Gloves required Procedure Mask/Chemo Gown recommended
Medication waste management	Chemo Gloves required Procedure Mask/Chemo Gown recommended	Chemo Gloves	Chemo Gloves
Human waste management	Chemo Gloves required Procedure Mask/Chemo Gown recommended	Chemo Gloves required Procedure Mask/Chemo Gown recommended	Chemo Gloves required Procedure Mask/Chemo Gown recommended
Spill Management	REFER TO SPILL MANAGEMENT ALGORITHM (Appendix B)		

¹ Shoe covers & protective eye wear should be worn whenever there is potential for splashing



Safe Handling of Medications Chart

- A copy of the complete ***Safe Handling of Medications Chart*** can be found in the policy and as a separate copy on the Medication Quality and Safety Committee page on WRHA INSITE page.

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Summary of Key Points When Handling Hazardous Medications

- Hazardous medications can potentially cause harm to workers.
- Hazardous medications can be classified as cytotoxic and non-cytotoxic.
- C.H.O.I.C.E is an acronym to be used with the safe handling of medications chart to determine proper handling procedures.



Other Points About Safe Handling of Hazardous Medications



- Be familiar with the **policy**.
- Change gloves every 30 minutes.
- Report any exposure (direct and indirect contact / skin puncture) with hazardous medication to immediate supervisor.
- Discuss concerns about pregnancy, breast-feeding or attempt to reproduce with your supervisor - may lead to temporary reassignment.



When Does This Safe Handling Policy Apply ?

- Greatest risk activities: preparation and administration of medication.
- Lesser risk activities: handling human waste of patients known to have received a hazardous medication in the last 48 hours.
- Staff should ensure they are wearing appropriate personal protective equipment (PPE) for each of these levels of exposure.



Preparation of Non-Cytotoxic Hazardous Medication



- Prepared by pharmacy or by nurse.
 - Site specific guidelines apply – contact your pharmacy for more information.
- Dispensed medications are labelled and packaged to reflect hazardous nature of medications.

WEAR GLOVES

**WEAR GLOVES
DO NOT CRUSH**



Administration of Non-cytotoxic Hazardous Medication



- ALL routes of administration pose risk of exposure and all doses – regardless of disease treated – are potentially hazardous.
- Don PPE (wear exam gloves)
- Tablets or capsules shall not be split, or crushed in a patient care area prior to administration.
- Contact Pharmacy for assistance.



Administration of Non-cytotoxic Hazardous Medication



- Ensure central or peripheral line is patent and blood return present / adequate when administering IV Non-cytotoxic Hazardous Medication.
- Post-infusion – flush with plain IV solution to ensure it's clear of Non-cytotoxic Hazardous Medication before disconnecting.



Preparation of Cytotoxic Hazardous Medication

- Prepared by pharmacy.
- Cytotoxic Hazardous Medications (all dosage forms) labelled with Cytotoxic Symbol.



- Packaged in sealable plastic bag (e.g. Ziploc®).

– Parenteral doses are double bagged.



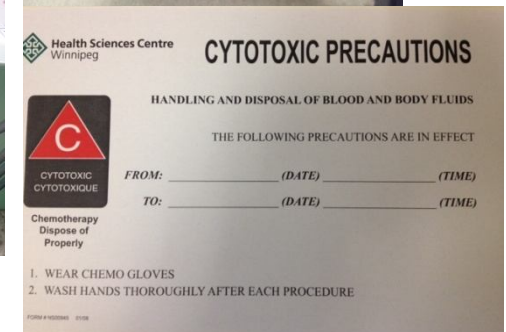
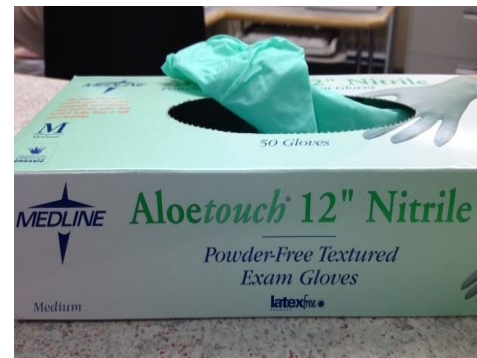
Preparation of Cytotoxic Hazardous Medication

- Syringes – dead end luer-lock syringe cap.
- Parenteral infusion bags:
 - tubing sets attached and primed by pharmacy with solution not containing the Cytotoxic Hazardous Medication (except pediatric preparations).
 - sets sealed with a dead end luer-lock cap.



Items That May Be Required When Administering Cytotoxic Hazardous Medication

- Cytotoxic Spill Kit (different than the regular spill kit)
- Chemotherapy gown
- Procedure mask
- Red cytotoxic waste container
- Chemo gloves
- Plastic backed absorbent pads
- Cytotoxic sign



Administration of Cytotoxic Hazardous Medication

- ALL routes of administration pose risk of exposure and all doses – regardless of disease treated – are potentially hazardous.
- Cytotoxic Signs/Symbols posted during administration (if applicable) & for 48 hours after the last dose administered.



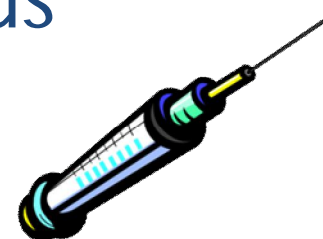
PPE for Administration Cytotoxic Hazardous Medication

- Required for all routes of administration
 - Chemo Gloves – 12 inch cuffs
- Recommended for administration of injectable/instillation & compromised doses
 - Chemo Gown – lint free, low permeability fabric
 - Procedure mask



Administration of Injectable Cytotoxic Hazardous Medication

1. All manipulation (once removed from plastic sealable bag) to take place on plastic backed absorbent pad (absorb side up).
2. Ensure central or peripheral line is patent and blood return present / adequate when administering IV Cytotoxic Hazardous Medication.



Administration of Injectable Cytotoxic Hazardous Medication

3. Post-infusion – flush with plain IV solution to ensure it's clear of Cytotoxic Hazardous Medication before disconnecting.
4. When disconnecting from med port – 2x2" gauze/alcohol pad used to absorb any droplets – dispose in Cytotoxic Waste container.



Administration of Injectable Cytotoxic Hazardous Medication

5. Transport of pt with Cytotoxic Hazardous Medication infusion out of pt care area – minimized.
6. If essential – Cytotoxic Spill Kit and staff trained in Cytotoxic Spill management to accompany pt.
7. Inter-facility transport of pt – minimized. If essential – RN trained in Cytotoxic Spill mgmt shall accompany pt & remain at all times.



Administration of Injectable Cytotoxic Hazardous Medication



8. Cytotoxic Hazardous Med discontinued / temporarily stopped partway thru' admin:
 - Clamp tubing and / or apply a dead end luer-lock cap.
 - Storage – discuss with pharmacy if necessary.
9. Place all Bulk Cytotoxic Waste for pharmacy disposal in double sealable plastic bags labelled with a Cytotoxic Symbol – Hand Deliver



Administration of Solid Oral Cytotoxic Hazardous Medication

- Don PPE (wear chemo gloves)
- Tablets or capsules shall not be split or crushed in a patient care area prior to administration.
 - Contact Pharmacy for assistance.



Administration of Compromised Cytotoxic Hazardous Medication

- Don PPE (chemo gloves required, chemo gown and procedure mask recommended)
- Discuss any administration issues with Pharmacy.



Disposal of Cytotoxic Medication Waste

- Don PPE (chemo gloves required)
- All items used while handling cytotoxic hazardous medications (parenteral, oral, inhalation, etc.) are considered Medication and/or Human Cytotoxic Waste – shall be discarded in Cytotoxic Waste Container.
 - Cytotoxic Waste Container to be disposed when $\frac{3}{4}$ full.
 - Cytotoxic Waste Container sealed and labelled with Cytotoxic Symbols prior to collection.



Disposal of Cytotoxic Human Waste



- Don PPE (chemo gloves require, chemo gown and procedure mask recommended)
- Safe Handling of Human Cytotoxic Waste followed x 48 hrs after last dose – regardless of route of administration.
- Contaminated laundry items – kept separate from other items in waterproof laundry bag and sent to laundry service.



Disposal of Cytotoxic Human Waste



- Personal items / clothing – sent home for cleaning (laundry separate from other clothes).
- Laundry bags (plastic) with contaminated clothes – sealed and sent to laundry services.
- Non-disposable items/equipment washed with detergent solution and rinsed with copious amounts of water – while wearing chemo gloves.



Disposal of Cytotoxic Human Waste

- Cover toilets before flushing.
- For toilets with no lids – cover bowl with disposable plastic-backed pad prior to flushing.
 - Disposable pad disposed in Cytotoxic Waste Container.



Exposure to Hazardous Medication

Immediately after all Exposure to Hazardous Medications or Waste.

- **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.



Exposure to Hazardous Medication

- **Skin Puncture** - Wash puncture site thoroughly with soap and running water for a minimum of 15 minutes. Squeeze puncture site to encourage bleeding.

Report any Exposure to your immediate supervisor. Appropriate site-specific reporting documentation shall be completed e.g. Patient Safety Event Report (occurrence report), work related injury near miss forms.



Cytotoxic Spills

Contained/Less Than 25 mL

- Cytotoxic Hazardous Medication or Human Cytotoxic Waste in an unintended location that is confined in such a manner that it cannot be spread or dispersed

Uncontained

- Cytotoxic Hazardous Medication or Human Cytotoxic 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



Cytotoxic Spill Management

- A copy of the ***Spill Management Algorithm*** can be found in the policy and as a separate copy on the Medication Quality and Safety Committee page on WRHA INSITE page.

<http://home.wrha.mb.ca/prog/medquality/policies.php>



Spill Management Algorithm - Appendix B

