A. SCOPE

This Policy covers the preparation, administration, and disposal of hazardous drugs. See Cancer Drug Manual Appendix 5 for the Hazardous Drug List. (www.bccancer.bc.ca/HPI/DrugDatabase/Appendices)

Hazardous drugs may have also been referred to as cytotoxics, antineoplastics or chemotherapy. These drugs may be administered by many routes. This policy refers to all routes of administration. A drug containing a living organism with the potential to cause infections in humans will be considered a hazardous drug with the designation of biohazardous drug, and will be included on the BCCA HD List.

For further information, refer to the individual drug monographs in the BCCA Cancer Drug Manual and relevant site and departmental directives and procedures.

B. POLICY STATEMENT

The management of the British Columbia Cancer Agency is committed to promoting a safe and healthy workplace for all staff in the organization. Hazardous drugs must be properly handled, in accordance with this policy and attached tables, to ensure that the receipt, storage, preparation, administration, and disposal of these agents will not pose an undue hazard to the staff or patients involved in their use.

C. RESPONSIBILITIES

Senior Management
- Designate responsibility for the implementation and maintenance of the Hazardous Drug Safe Handling Standards.
- Ensure that all managers and supervisory staff are familiar with and adhere to the Hazardous Drug Safe Handling Standards.
- Ensure that health surveillance mechanisms are established for all staff that are at significant risk of exposure to hazardous drugs.

Directors/Managers and Supervisory Staff
- Ensure that all staff are fully familiar with the Hazardous Drug Safe Handling Standards and that they receive safe handling education and training.
- Ensure that staff comply with all workplace safe handling policies and procedures.
- Ensure that the health and safety of patients and staff are given primary consideration when implementing or altering processes, programs, or physical facilities related to hazardous drugs.
- Make every effort to accommodate requests to change work assignments for staff who are pregnant, breastfeeding or attempting to reproduce.
• Ensure hazardous drug exposure records are maintained for duration of employment of each employee plus 10 years, and training records for 3 years from the date training occurred. (WorkSafe BC Regulations).

Healthcare Staff
• Follow all safety requirements according to WorkSafe BC Cytotoxic Regulations and the Hazardous Drug Safe Handling Standards and BCCA policies/directives.
• Report all unsafe acts and conditions.
• Actively participate in the recommended health surveillance programs.
• Actively participate in the education and training programs provided.

Workplace Health (PHSA)
• Co-ordinate the planning, development, and implementation of a comprehensive Exposure Control Plan
• Develop, implement, and maintain a health surveillance program for all staff exposed to hazardous drugs.
• Assist in the development of new procedures as required.

D. GENERAL DIRECTIVES

Staff Education
• Education for the safe handling and exposure documentation of hazardous drugs is to be provided prior to working with hazardous drugs.

• Information on the possible risks and necessary precautions to take when handling hazardous drugs must be made available to all relevant staff.

• Written procedures for handling hazardous drugs must be accessible to all relevant staff.

• Personnel handling hazardous drugs must receive education and training in the use of personal protective equipment, safe handling procedures and hazardous drug spill management to decrease risk of exposure to these agents. (Refer to Table 2)

• To ensure that safe handling procedures are being followed, work practices must be assessed at appropriate intervals with retraining provided as necessary.

Storage and Transportation
• Access to hazardous drug storage areas must be limited to authorized personnel.

• Primary containers of prepared hazardous drugs must be transported in, sealed, zip-lock bags and stored in these bags until time of administration.
• Hazardous drugs must be stored separately from other drugs.

• Storage bins/shelves must be designed in a manner that will contain accidental leakage and reduce the chance of hazardous drugs falling to the floor.

• Pneumatic tubes must not be used for transporting hazardous drugs.

• Damaged cartons containing hazardous drugs are NOT opened. They must be isolated and handled following BCCA Policy V-30, “Hazardous Drug Spill Management (section II) and/or relevant directives (Refer to Table 1).

• For transportation outside the facility, hazardous drugs must be wrapped to avoid breakage and packaged according to Transportation of Dangerous Goods Regulations. Hazardous drugs may be transported via courier or mail (oral hazardous drugs) as per applicable BCCA pharmacy directives. (Refer to Table 1)

Labelling/Signage
• To indicate their potentially hazardous contents, hazardous drugs (including oral and topical forms), wastes, equipment and waste containers must be labelled with distinctive warning signs/labels such as:

  ‘HAZARDOUS-
    -- handle with gloves --
    -- dispose of properly --”

• Warning signs must be posted in all areas where hazardous drugs are stored or prepared.

• The signs must be clearly visible and must clearly state the identified hazards. i.e.

  "CAUTION
  KNOWN OR SUSPECTED CARCINOGEN
  AUTHORIZED PERSONNEL ONLY"
Personal Protective Equipment (PPE)
- Personal protective equipment (PPE) must be worn whenever hazardous drugs are handled (Refer to Table 2).
- The appropriate PPE must be available in all areas where hazardous drugs are handled (received, stored, prepared, administered and disposed).
- PPE must be worn when disconnecting and disposing of equipment used in the administration of hazardous drugs.
- Gloves must be changed every 30 minutes or immediately if contaminated, torn, or punctured.
- Gowns must be changed daily or immediately if contaminated, and after hazardous drug spill clean up.
- PPE must not be worn outside the hazardous drug storage, preparation or administration areas.
- Used disposable PPE must be discarded as hazardous waste.
- Wash hands with soap and water immediately after removal of gloves.

Drug Preparation
- BCCA personnel preparing hazardous drugs will follow BCCA Pharmacy Practice Standards for Hazardous Drugs and relevant BCCA Pharmacy directives.
- Preparation of hazardous drugs must take place in the pharmacy or, in facilities where there is not a pharmacy, by personnel who have access to an approved biological safety cabinet (BSC) and who are trained to prepare and handle these agents safely.
- Preparation of hazardous drugs must take place in a Class II Type B or better, externally-vented biological safety cabinet which must have airflow monitoring devices and be certified every 6 months.
- Only luer-lock connections will be used in the preparation of hazardous drugs.
- Closed System Drug Transfer Devices (CSDTD) will be used in the BSC for the preparation of hazardous drugs (except when incompatible).
Medication Ordering and Checking
- Refer to BCCA Systemic Therapy Policy III-10: Chemotherapy Process; http://www.bccancer.bc.ca/HPI/ChemotherapyProtocols/Policies.htm

Administration of Hazardous Drugs
- Any BCCA personnel administering hazardous drugs must follow procedures in Nursing Directive C-252 and/or relevant policies.
  - Some routes may be designated for administration by physician only. See BCCA Policy III-50 and VGH PDTM at http://vchconnect.vch.ca/utility/page_47702.htm
  - Hazardous drugs must not be transferred from syringes to infusion bags outside of an approved biological safety cabinet.
  - The RN administering hazardous chemotherapy drugs must have completed a Chemotherapy/Biotherapy Education Certification Program, as outlined by the employer. The RN participating in the chemotherapy certification practicum may administer hazardous drugs under the supervision of a chemotherapy preceptor or clinical instructor/educator. RNs administering hazardous drugs that are not classified as chemotherapy, ie, hormonals, must have completed safe handling education.
  - Only luer-lock connections will be used for the administration of hazardous drugs.
  - Closed System Drug Transfer Devices will be used for the administration of hazardous drugs (except when incompatible or where use of the device will not achieve a closed system).
  - All tubing used to administer chemotherapy must be primed with a solution that does not contain a hazardous drug.
  - All chemotherapy infusions will be administered by a secondary medication line except in those cases where the nature of the chemotherapy requires specialty tubing.
  - The primary line must be well flushed with a minimum of 25 mL of compatible IV solution prior to disconnection.
  - Any tubing used to administer hazardous drugs must be disposed of as hazardous waste, even though tubing has been flushed prior to disconnection. The tubing must be discarded attached to the hazardous drug infusion bag as an intact ‘closed’ system.
  - All disconnections of hazardous drugs from the patient must be done using the CSDTD with the system remaining ‘closed’ (except when incompatible or where use of the device will not achieve a closed system).
Hazardous Waste

- All waste products from the preparation and administration of hazardous drugs shall be treated as hazardous waste and ultimately disposed of according to relevant Federal and Provincial regulations.

- All work areas must be provided with a closable, puncture-resistant, shatterproof container for disposal of contaminated sharps/breakable materials or liquids clearly labelled with the hazard symbol.

- All syringes and needles used for preparation, and administration must be placed in this container for disposal without being crushed, clipped or capped. Syringes used to administer hazardous drugs must be discarded with the closed system device still attached to the syringe.
The hazardous waste container must be sealed when three-quarters full or at indicated maximum fill line. All disposable non-sharp materials may be disposed of in 4 mil thick plastic bags which are kept inside a covered waste container or carton clearly labelled for hazardous waste. The bag must be sealed when it is three-quarters full and the lid of the container or carton must be taped.

While awaiting disposal from the facility, hazardous waste shall be stored in a secure area in covered, labelled containers with plastic liners.

**Body Wastes**
- Uncontained body wastes from all patients must be handled following the BCCA ST Policy V-30; Hazardous Drug Spill Management

- Contained body wastes from all patients must be handled using standard Body Substance Precautions (B.S.P.) - Standard Precautions.

**Non-disposable Equipment/Items**
- Terminal cleaning of re-usable equipment/items must include thorough washing, with mild detergent. Cleaning personnel must wear appropriate personal protective equipment.

- If re-usable equipment/items are sent to another department for terminal cleaning, they must be transported in sealed leak-proof bags or containers and labelled as hazardous.

- Linen contaminated with hazardous drug, blood, vomit, or excreta must be handled using Body Substance Precautions (B.S.P.) - Standard Precautions. and transported to laundry facilities in impermeable bags.

**Spills**
- A clearly labelled hazardous drug spill kit will be kept in all areas where hazardous drugs are received, prepared, administered or stored. Refer to Agency Policy “Spill Management of Hazardous Drugs” for list of recommended contents of spill kits.

- Hazardous drug spills and breakages must be cleaned up immediately by a properly protected person trained in the appropriate procedures. Refer to ST Policy V-30; Hazardous Drug Spill Management for spill clean-up procedures.

- Spills inside a biological safety cabinet (BSC) must be cleaned promptly to avoid expansion and spread. Refer to current pharmacy directive for procedures for spill clean-up inside a BSC.

- Spills of an unknown nature must be handled using hazardous drug spill procedures.
Documentation
- All employees who prepare or administer hazardous drugs are required to document their exposure on a daily exposure record of hazardous drugs.

- BCCA is required to maintain exposure records for duration of employment of each employee plus 10 years, and training records for 3 years from the date training occurred (WorkSafe BC Regulations).

E. PRACTICE REFERENCES FOR SPECIFIC PROCEDURES

Preparations of hazardous drugs - refer to current versions of:
- BCCA ST Policy V-30; Spill Management of Hazardous Drugs (http://www.bccancer.bc.ca/HPI/ChemotherapyProtocols/Policies.htm#v30)
- BCCA Pharmacy Practice Standards for Hazardous Drugs and BCCA pharmacy directive(s) related to preparation of hazardous drugs (http://www.bccancer.bc.ca/HPI/Pharmacy/GuidesManuals/safehandling.htm)
- Site Directives relevant to preparation of hazardous drugs

Administration of hazardous drugs - refer to current versions of:
- BCCA Policy V-30; Spill Management of Hazardous Drugs (http://www.bccancer.bc.ca/HPI/ChemotherapyProtocols/Policies.htm#v30)
- BCCA Provincial Nursing Practice Reference C-252 (http://www.bccancer.bc.ca/HPI/Nursing/References/NursingBCCA/C-252.htm)
- Site Directives relevant to administration of hazardous drugs

Receiving and transport of hazardous drugs - refer to current versions of:
- BCCA Policy V-30;Spill Management of Hazardous Drugs (http://www.bccancer.bc.ca/HPI/ChemotherapyProtocols/Policies.htm#v30)
- BCCA directive(s) or site directives relevant to receiving and transport of hazardous drugs
- Host hospital policies, directives and/or procedures relevant to receiving and transport of hazardous drugs

Maintenance, housekeeping, and other activities related to hazardous drugs - refer to current versions of:
- BCCA Policy V-30;Spill Management of Hazardous Drugs (http://www.bccancer.bc.ca/HPI/ChemotherapyProtocols/Policies.htm#v30)
- BCCA directives or site directives relevant to maintenance, housekeeping, etc.
- Host hospital policies, directives and/or procedures relevant to maintenance, housekeeping, etc.
F. GLOSSARY

Body waste - Any waste excreted by or originating from any patient’s body (e.g. blood, faeces, urine).

Body waste, contained - Any body waste which is confined within a holding vessel, absorbed into material or restricted in such a manner that it cannot expand or be dispersed.

Body waste, uncontained - Any body waste which is not restricted or confined in any way but exists in such a manner that it could spread or be dispersed.

Hazardous Drug - Drug that exhibits one or more of the following characteristics in humans and/or animals: carcinogenicity, teratogenicity or other developmental toxicity, reproductive toxicity, organ toxicity at low doses, genotoxicity and structure and toxicity profiles of new drugs that mimic existing drugs determined hazardous by the five previous criteria. If there is no information found and the drug is primarily used as an antineoplastic agent, it will be deemed as hazardous. If a drug contains living organisms with potential to cause infections in humans it will be considered a hazardous drug and will be designated a biohazardous drug on the Hazardous Drug List. Note: Hazardous drugs have been referred to as “cytotoxic, antineoplastic, hazardous, and/or chemotherapy”. (Refer to Cancer Drug Manual Appendix 5 http://www.bccancer.bc.ca/HPI/DrugDatabase/Appendices/default.htm)

Bio-hazardous Drug - A drug containing living organisms with potential to cause infections in humans. Bio-hazardous drugs are considered hazardous drugs and will be included on the NIOSH HD List or BCCA HD List Addendum. Note: Bio-hazardous drugs may include gene therapy, biological, and/or biohazards.

G. REFERENCES

WorkSafe BC OHS Regulation, Part 6: Substance specific requirements: Cytotoxic Drugs and OHS Regulation, Part 6


Preventing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Health Care Settings. NIOSH ALERT, 2004.


WorkSafe BC Publications. OHS Regulation Part 8 Personal Protective Clothing and Equipment.

TABLE 1: STORAGE AND TRANSPORTATION OF HAZARDOUS DRUGS

Hazards drugs delivered

If packaging intact

Package delivered to pharmacy. Pharmacy processes order and places drug in appropriate storage area

For treatment in-house

Hazardous drugs are prepared by pharmacy, using a CSDTD, packaged in ziplock bags, and labelled to indicate hazardous contents

Prepared hazardous drugs are delivered to treatment area by nursing or pharmacy staff, and administered using CSDTD.

For external transport

Pharmacy takes steps to ensure hazardous drugs are packaged and transported according to Transportation of Dangerous Goods Act and applicable pharmacy directives

If packaging damaged

Stores receiver dons PPE; follows BCCA ST Policy V-30 (Section II) to safely isolate and contain the package and notifies pharmacy receiver of package status

Pharmacy receiver dons PPE, follows HD Spill Management: ST Policy V-30 (Section II) and Pharmacy Directive VI-10 (Section II), to safely isolate and contain the package and notifies vendor of package status.
TABLE 2: PERSONAL PROTECTIVE EQUIPMENT

<table>
<thead>
<tr>
<th>PROTECTIVE EQUIPMENT</th>
<th>CHEMOTHERAPY GLOVES</th>
<th>CHEMOTHERAPY GOWN</th>
<th>EYE/FACE PROTECTION</th>
<th>RESPIRATOR MASK</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEMOTHERAPY GLOVES</td>
<td>Pass permeation testing (ASTM Standard 6978-05); Disposable, minimum of 4 mil thick powder-free; made of latex, nitrile, neoprene or polyurethane (preferably latex-free); sufficient length to cover cuff of chemotherapy gown</td>
<td>Moisture-resistant, non-linting, disposable, back closing, long-sleeved gown with cuffs, made of material sufficiently impermeable to hazardous drugs</td>
<td>Face shield, or safety goggles must be worn when there is a risk of hazardous drug eye contact (eg. splashing). Adequate eyewash and shower facilities must be provided (WorkSafe BC)</td>
<td>NIOSH approved N-95 or better respirator mask (WorkSafe BC)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>CHEMOTHERAPY GLOVES (two pairs)</th>
<th>CHEMOTHERAPY GOWN</th>
<th>EYE PROTECTION</th>
<th>RESPIRATOR MASK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Drug Preparation inside the BSC</td>
<td>Always (outer pair must be sterile)</td>
<td>Always</td>
<td>No (Except when BSC viewing window raised)</td>
<td>No (Except when BSC viewing window raised)</td>
</tr>
<tr>
<td>Hazardous Drug Preparation outside the BSC (ie. oral, topical)</td>
<td>Always</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Hazardous Drug Administration</td>
<td>Always</td>
<td>Always (Except intact capsules or coated tablets)</td>
<td>No (Except if risk of eye contact –ie. splashing)</td>
<td>No</td>
</tr>
<tr>
<td>Hazardous Drug Spill Clean-Up</td>
<td>Always</td>
<td>Always</td>
<td>Always</td>
<td>Always</td>
</tr>
<tr>
<td>Hazardous</td>
<td>Always</td>
<td>Yes If handling</td>
<td>Yes If handling</td>
<td>Yes If handling</td>
</tr>
<tr>
<td>Drug Waste Disposal</td>
<td>uncontained waste</td>
<td>uncontained waste</td>
<td>uncontained waste</td>
<td></td>
</tr>
</tbody>
</table>

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