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# Conducting an Antineoplastic Drug Risk Assessment in Community Settings

## Resource Manual



## **Conducting an Antineoplastic Drug Risk Assessment in Community Settings**

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### **Public Services Health and Safety Association (PSHSA)**

4950 Yonge Street, Suite 1800

Toronto, Ontario M2N 6K1

Canada

Telephone: 416-250-2131

Fax: 416-250-7484

Toll Free: 1-877-250-7444

Web site: [www.pshsa.ca](http://www.pshsa.ca)

Connect with us:

 [@PSHSAca](https://twitter.com/PSHSAca)

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# Table of Contents

|  |     |
|--|-----|
| Terms of Use .....   | i   |
| Table of Contents.....   | iii |
| Icons Used in this Training.....   | iv  |
| Introduction.....  | 1   |
| Risk Assessment .....  | 4   |
| Using the RACE Model.....  | 5   |
| Procedures.....  | 6   |
| Recognize.....   | 6   |
| Assess.....  | 6   |
| Control .....  | 10  |
| Evaluate.....  | 10  |
| Legislation, Standards and other Resources.....  | 11  |
| Other Additional Resources .....   | 12  |
| Appendix A: Antineoplastic Drug Risk Assessment .....  | 13  |
| Recognize.....   | 14  |
| Assess.....  | 15  |
| Control .....  | 19  |
| Evaluate.....  | 20  |
| Appendix B: Antineoplastic Drugs - From the Healthcare and Residential<br>Facilities Regulation 67/93 (where applicable) ..... | 21  |
| Appendix C: References.....  | 22  |
| Glossary .....   | 23  |

## Icons Used in this Training

In the book you will see the following icons. The table below explains what these icons mean and how they are used.

Icon

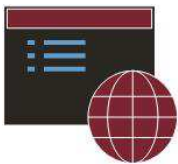
What it Means



Important Information for you to Remember



OSHA Reference and/or Regulations



Website Reference

## Introduction

The following guide and assessment tool has been developed for community care settings in which a number of subsectors reside: community support services, home care services, hospice services, supportive housing and group homes. The aim of this guide is to ensure the safety and health of employees working in these work environments and to prevent exposure to antineoplastic (anti-cancer) drugs and its associated wastes. The term ‘workplace’ is used throughout this document and may refer to any place a worker works i.e. group home, supportive housing unit, client’s home or vehicle.

*Antineoplastic drugs* are chemotherapy drugs used to control or kill cancer cells; some are also used to treat non-cancerous conditions such as rheumatoid arthritis or psoriasis. These drugs are one example of hazardous drugs. The term “hazardous drugs” has been defined by the [National Institute for Occupational Safety and Health \(NIOSH\)](https://www.cdc.gov/niosh/topics/antineoplastic/pdf/hazardous-drugs-list_2016-161.pdf) as those that exhibit one or more of the following six characteristics<sup>1</sup> in humans and animals:

1. Carcinogenic (cancer causing)
2. Teratogenic toxicity or other developmental toxicity (affects the fetus)
3. Reproductive toxicity (affects fertility)
4. Organ toxicity at low doses
5. Genotoxic (affects DNA or genetic material)
6. Similar drugs (new drugs whose structure and toxicity are similar to those existing drugs based on one of the above criteria)

Another common term when discussing antineoplastic drugs is “cytotoxic”. These two terms are sometimes used interchangeably.

*Cytotoxic* means the substance has a toxic effect on cells within the body.

Any worker involved in the handling, preparation and/or administration of antineoplastic drugs and the personal care of clients receiving these drugs may be at risk of exposure. Exposure to antineoplastic drugs and its associated wastes can occur at any point in the medication circuit flow chart (Figure 1).



Antineoplastic drugs are chemotherapy drugs used to control or kill cancer cells, some are also used to treat non-cancerous conditions such as rheumatoid arthritis and psoriasis.

Cytotoxic, a term sometimes used interchangeably with antineoplastic drugs, means the substance has a toxic effect on cells within the body.

---

<sup>1</sup> NIOSH. (2016). *NIOSH List of Antineoplastic and Other Hazardous Drugs in Healthcare Settings*. Retrieved from [https://www.cdc.gov/niosh/topics/antineoplastic/pdf/hazardous-drugs-list\\_2016-161.pdf](https://www.cdc.gov/niosh/topics/antineoplastic/pdf/hazardous-drugs-list_2016-161.pdf)



## Conducting an Antineoplastic Drug Risk Assessment in Community Settings



Figure 1: Sample medication circuit flow chart (last three steps are applicable to community care settings)

Antineoplastic drugs can be administered to clients in hospital ambulatory clinics, regional cancer centres and in the community. The areas of the medication circuit of concern to many community care settings are assisting the client with administration of the antineoplastic drug (done either by staff or a service provider nurse), handling excreta and wash water, disposal of wastes, and support activities such as laundry, dishwashing and environmental cleaning; also during any spill clean-up. Excreta, from clients treated with antineoplastic drugs, may contain drug residue or metabolic by-products for a particular period of time (up to 48hrs or 5-7 days or more after the last dose). This depends on the drug used and the method of administration (oral vs. intravenous (IV)).

### Routes of entry into the body for antineoplastic drugs include:

- Skin absorption (primary route of entry);
  - Direct contact with drug during administration
  - Indirect contact with drug contaminated work surfaces or objects such as linen or waste
  - Direct or indirect contact with excreta or other body fluids after drug administration
  - Not wearing gloves, permeation through gloves or not washing hands thoroughly
- Inhalation (i.e. breathing in drug vapours/dust, *if applicable*);
- Accidental injection\* (i.e. needles or other sharps contaminated with drugs which puncture the skin);

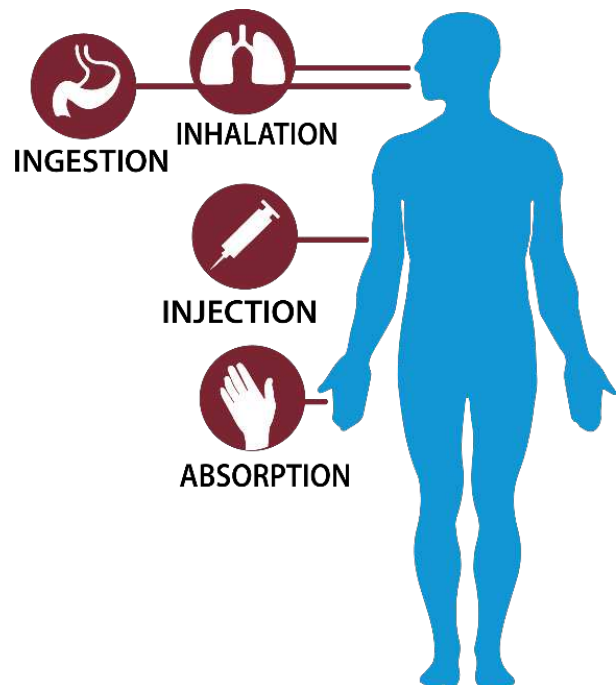


Figure 2: Routes of entry into the body



## Conducting an Antineoplastic Drug Risk Assessment in Community Settings

\*The use of safety-engineered medical sharps (SEMS) help protect workers from accidental injection. The O.Reg 474/07 Needle Safety Regulation outlines that when a worker is to do work requiring the use of hollow-bore needles, the employer must provide the worker with safety-engineered needles that are appropriate for the work.

- **Ingestion** (i.e. not washing contaminated hands prior to eating or putting contaminated fingers or pencils/pens in mouth). Proximity of eating area to drug storage and handling areas.

Any worker who performs personal care, medication preparation and administration, cleaning, laundry, waste disposal and meal preparation for clients treated with antineoplastic drugs may have a potential exposure to these drugs.

While it is not the employer's responsibility to ensure the health and safety of informal caregivers (i.e. family members and friends), these individuals may also be assisting clients with the tasks mentioned above and need to know about the risks of exposure to antineoplastic drugs.

The Ministry of Labour (MOL) regularly conducts hazard-specific blitzes in an effort to protect the health and safety of workers in Ontario. In November 2013, the MOL visited healthcare clients for hazardous drugs and waste management hazards. In response to the blitz, Public Services Health and Safety Association (PSHSA) developed a white paper on "Safe Handling of Hazardous Drugs in Healthcare" found at the following link:

<http://www.pshsa.ca/wp-content/uploads/2013/11/PSHSA-Whitepaper-Safe-Handling-of-Hazardous-Drugs-in-Healthcare.pdf>

This guide and the antineoplastic drug risk assessment tool should be used in conjunction with the white paper. In the above link, you'll find more information on the risk and effects of exposure to hazardous drugs, examples of controls and the elements of a hazardous drug exposure control program. Please also contact your local Regional Cancer Program for further resources on specific antineoplastic drugs. A list of additional resources is also provided at the end of this guide.

## Risk Assessment

The PSHSA antineoplastic drug *risk* assessment form (Appendix A) offers a formal way to recognize the potential hazards of antineoplastic drugs in the workplace, assess the hazards, and identify potential control options. *It should be completed by the supervisor prior to any client being treated with antineoplastic drugs at the workplace or any client returning to the residence after cancer treatment.*

The Joint Health & Safety Committee (JHSC) or Health & Safety Representative (HSR) must be consulted when planning and conducting the risk assessment. JHSC or HSR participation should be encouraged. The completed risk assessment should be provided (as per s. 25(2)(l) of OHSA) and discussed with the JHSC/HSR.



Risk is the chance or probability that a person will be harmed or experience an adverse health effect if exposed to a hazard

To be able to recognize issues, the person conducting the assessment should:

- Have an understanding of the adverse health effects of antineoplastic drugs exposure.
- Be able to identify which workers are or are potentially at risk of exposure in their specific workplace.
- Be able to identify work activities that could expose workers to antineoplastic drugs.
- Be able to identify one or more factors that affect risk of exposure to antineoplastic drugs.
- Be able to describe the medication circuit steps as it applies to their workplace.
- Be able to identify key risks and controls as it relates to the medication circuit and applicable organizational policies.
- Be able to prepare a list of antineoplastic drugs administered to clients

The assessment is based on current best practice guidelines, standards and legislative requirements. It involves a review of health and safety policies and procedures; an observation of the workplace and interviews with staff. The goal is to develop or enhance workplace-specific measures and procedures for the health and safety of workers who may be exposed to antineoplastic drugs and their associated wastes. Training should be delivered to inform staff of the hazards of exposure to antineoplastic drugs. This is in keeping with the requirements of the Occupational Health and Safety Act (OHSA) and the Health Care and Residential Facilities (HCRF) Regulation O.Reg 67/93, where the regulation applies.

Please refer to Appendix B for the relevant sections of the HCRF Regulation.

As areas of knowledge and best practice are continually changing over time, it is wise to keep up-to-date with recommendations in the field of hazardous drug classification (through the National Institute for Occupational Safety and Health (NIOSH)) and the International Agency for Research on Cancer (IARC) evaluations of hazardous drugs, amongst others.

**Using the RACE Model**

A thorough and accurate risk assessment must be organized in a step-by-step manner following the RACE model:

| R   | A  | C  | E  |
|---|--|--|--|
| Recognize   | Assess   | Control  | Evaluate   |
| <ul style="list-style-type: none"> <li>• Workplace Inspections</li> <li>• Hazard Identification Tools</li> <li>• Job Hazard Analysis</li> <li>• Observations</li> <li>• Problems/ concerns of anyone</li> <li>• Use your senses</li> <li>• Review of Documents</li> </ul> | <ul style="list-style-type: none"> <li>• <b>Compare to a standard</b></li> <li>• <b>Risk assessment</b> <ul style="list-style-type: none"> <li>- Identify how the individual might get harmed</li> <li>- Identify the probability that the hazard is going to cause harm</li> <li>- Identify how severe the hazard could be</li> <li>- Identify hazard priority</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• <b>Locations:</b> <ul style="list-style-type: none"> <li>- At the Source</li> <li>- Along the Path</li> <li>- At the Worker</li> </ul> </li> <li>• <b>Controls:</b> <ul style="list-style-type: none"> <li>- Elimination</li> <li>- Substitution</li> <li>- Engineering</li> <li>- Administrative</li> <li>- Personal Protective Equipment (PPE)</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• <b>The control is:</b> <ul style="list-style-type: none"> <li>- Working as expected</li> <li>- Has been communicated to affected workers</li> <li>- Reduces the risk</li> <li>- Reduces complaints, injuries, illnesses</li> <li>- Does not create new hazards</li> </ul> </li> </ul> |

Figure 3: RACE model

If you have questions about the material in this guide, or need assistance when planning, conducting or reviewing the risk assessment, contact the PSHSA H&S Consultant serving your region.



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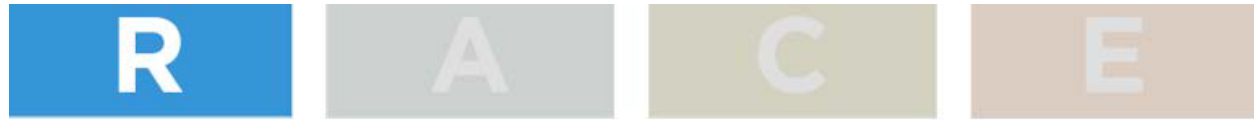
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## Procedures

The antineoplastic drug risk assessment form (Appendix A) is divided into the following sections: *recognize*, *assess* and *control* with areas for recommendations within each. After the controls have been implemented it is best practice to reassess the risk (*evaluate*). The following information will help you complete the risk assessment form.



### 1. Recognize

- Identify the antineoplastic drugs used (if any), the area used, the frequency of use and quantity received on-site
- Prepare a list of antineoplastic drugs administered to clients, if any
- Review any past incidents or reported issues from the JHSC/HSR



### 2. Assess

- Identify potential worker exposure and level of risk
- Develop a medication circuit flow chart applicable to the workplace
- Gather existing process and control information; interview staff
- Inspect the workplace (walkthrough)

Determine if any worker is likely to be exposed and the level of risk (high, medium or low) by asking these questions:

- Does the antineoplastic drug enter the workplace as a parenteral (IV or injection), liquid, topical cream, or tablet form?
- Is the substance altered for drug administration purposes (i.e. are tablets crushed or dispersed in water for oral or G-tube feedings)?
- Is there a risk for the drug to be released into the work environment during use? Where (i.e. bedroom, kitchen, etc)?
- Which staff and approximately how many might be exposed?
- Which job tasks involve the handling and disposal of antineoplastic drugs and their associated wastes?
- Have policies and procedures related to antineoplastic drugs been reviewed in their entirety with workers?
- Has training related to antineoplastic drugs been provided to workers?
  - Training should include: describing health effects of exposure; safe handling and disposal; emergency procedures following exposures to antineoplastic drugs and their associated wastes; proper

## Conducting an Antineoplastic Drug Risk Assessment in Community Settings

maintenance and disposal of contaminated equipment; control measures; and any other measures and procedures that need to be in place for antineoplastic drugs.

- What is the potential route of exposure (i.e. skin absorption, inhalation, ingestion or injection)?
- What are the potential harmful effects?

Refer to PSHSA's "Safe Handling of Hazardous Drugs in Healthcare" white paper for discussion on the risks of exposure. If the risk is determined to be high, consider having an (industrial) hygiene assessment conducted or contacting your local Regional Cancer Program for guidance.

Develop a medication circuit flow chart applicable to the workplace (Figure 1). This would outline all the steps that the drug would travel or be present in the workplace (i.e. from how it enters the workplace to how the drug or its associated waste is disposed of).

Conduct a review of the workplace health and safety policies and procedures and interviews with staff to gather process and control information.

Subsequently do a walk-through of the workplace to identify any potential hazards. The following questions may guide you in your observations (NB: some items may not be applicable given the type of work setting):

### **Contamination**

- What types of containers are used for storing drugs?
- Is there any indication that containers are leaking or causing spills?
- Is there any drug dust noticeable in the work area?
- Is there any contamination detectable where drugs are handled, stored or administered?
- Is there any evidence of client bodily fluids, feces and urine requiring clean-up?

### **Waste disposal**

- Does the employer have policies and procedures on cytotoxic waste disposal from the workplace (i.e. client home, group home, etc) in compliance with provincial, municipal or local biomedical waste requirements? Have the patients, caregivers or family members been notified of requirements?
- Is the workplace complying with the appropriate antineoplastic (cytotoxic) drug waste disposal instructions? Refer to Environmental Protection Act, R.S.O 1990, Part V; Regulation 347 (General - Waste Management); and the Guideline C-4, 'The Management of Biomedical Waste in Ontario' for the management of cytotoxic waste requirements.
- Are there designated cytotoxic waste receptacles and cytotoxic sharps containers that are clearly labeled for staff use? Are there sufficient numbers? Are they accessible?

## Conducting an Antineoplastic Drug Risk Assessment in Community Settings

- Are cytotoxic waste receptacles labelled with a cytotoxic hazard symbol (see figure 1 under 'waste')?
- Are cytotoxic waste receptacles replaced when  $\frac{3}{4}$  full?
- Do staff handling antineoplastic drugs and associated wastes discard any waste generated into designated cytotoxic waste receptacles?
- Is the service provider nurse advised when the cytotoxic waste receptacle in the client's home is full?
- Does the service provider nurse arrange for pick-up of cytotoxic waste\* in the client's home by an approved waste disposal company?

\*Cytotoxic waste is considered hazardous and must be incinerated at high temperatures.

- Have arrangements been made with the attending pharmacy for pick-up of unused antineoplastic drugs, if applicable?

### **Hygiene facilities**

- Is there a designated bathroom/commode (if applicable) for any client on treatment?
- Are there hygiene facilities (i.e. hand-washing facilities) for workers to use?

### **Ventilation systems**

- Is the appropriate ventilation system used? Refer to the (material) safety data sheet ((M)SDS)/drug product monograph for appropriate ventilation requirements.
- Is it functioning properly?
- Does the employer have an expert who can assess proper ventilation in the workplace (i.e. client home, group home, etc)?
- Has the employer trained workers on how to assess ventilation?

### **Storage facilities**

- Are antineoplastic drugs properly stored in a designated secured storage area to avoid contaminating the workplace?
- Are the antineoplastic drugs kept away from direct sunlight, food, pets or children?
- Is there controlled access to medication by staff?
- Are drugs stored in rigid, sealed, properly identified containers reserved exclusively for this purpose?
- If the drug needs to be refrigerated, is a dedicated fridge used?
- Has the nurse or pharmacist provided any special storage instructions?

### **Administering procedures**

- Are (M)SDSs (if available) or drug product monographs reviewed for risk precautions and additional control measures?



## Conducting an Antineoplastic Drug Risk Assessment in Community Settings

- Are cytotoxic drugs labelled with the cytotoxic hazard symbol?
- Do staff prepare antineoplastic drug medication appropriately? Refer to the drug product monograph for the appropriate administering procedures for the particular drug.
- Do staff eat, drink, smoke, apply makeup or store food/drink in the drug administration, handling or storage areas (prohibited under O. Reg 67/93 s.32)?
- Have arrangements been made with the pharmacy to provide the drugs in a ready to administer form to avoid crushing/cutting oral medication?

### **Housekeeping**

- Are dedicated mops, buckets and cloths used to clean treatment areas only? This mop and bucket should not be used in any other area of the workplace.
- Are disposable mops and any cleaning material disposed of after use in the designated cytotoxic waste receptacles?
- Are surfaces and equipment cleaned and decontaminated?

### **Laundry**

- Have procedures and existing controls for laundering of linens exposed to antineoplastic drugs or client excreta been reviewed?
- Are clothes, bedding, any slings, etc. of clients receiving antineoplastic drugs washed separately and immediately?
- Are clothes washed appropriately (i.e. heavily soiled laundry washed twice separately)?

### **Personal protective equipment (PPE)\***

- Are gloves, face and eye protection, disposable gowns, NIOSH approved respirators required to be worn?
- Is the PPE appropriate for use?
- Is N95 respirator fit testing and training up-to-date?

\*See [NIOSH List of Antineoplastic and Other Hazardous Drugs in Healthcare Settings, 2016](#) for appropriate PPE and engineering controls based on the formulation of the drug listed in the NIOSH document; [Cancer Care Ontario: Safe Handling of Cytotoxics, 2013](#) and/or the (material) safety data sheet ((M)SDS)

### **Emergency procedures**

- Have policies and procedures for worker exposure to antineoplastic drugs or client excreta been reviewed?
- What equipment is available to handle an emergency?
- Is there an accessible eyewash station in case of accidental exposure?



## Conducting an Antineoplastic Drug Risk Assessment in Community Settings

- Does the eyewash station meet the American National Standard for Emergency Eyewash and Shower Equipment (ANSI/ISEA Z358.1-2014) standard?
- Is there a spill kit readily accessible in areas where drugs are stored, transported, handled and administered?
- Have workers who must use the spill kit been trained on the safe practice?
- Is there a spill kit team available to assist?
- Does the spill kit containing all the necessary materials and equipment to clean up a spill? If used, has a replacement been purchased?
- Are (M)SDSs or drug product monographs available onsite and used with regards to first aid measures and medical follow-up?



### 3. Control

- Review and analyze the collected data
- Identify control measures

Determine the adequacy of existing control measures and the need for additional ones. The control section includes a space to add recommendations related to the categories observed during the walk-through. Refer to PSHSA's "Safe Handling of Hazardous Drugs in Healthcare" white paper for discussion on the hierarchy of controls.

### Overall Conclusion

The Overall Conclusion is the area in the report where you will place a summary of all recommendations.

Review and analyze the completed risk assessment form to identify the need to develop and implement a comprehensive antineoplastic drug exposure control program.



### 4. Evaluate

After the controls have been implemented it is best practice to reassess the risk (*evaluate*) with the control measures in place to determine if the program is adequately protecting workers.



## **Legislation, Standards and other Resources**

### **Healthcare and Residential Facilities Regulation 67/93 (where applicable)**

The Healthcare and Residential Facilities Regulation 67/93 s. 97 has specific requirements related to antineoplastic drugs including written policies and procedures if a worker is likely to be exposed to these agents or to material or equipment contaminated with antineoplastic agents. The control program must have provisions for the safe handling and disposal of antineoplastic drugs and its associated wastes; emergency procedures in the case of accidental exposure; procedures for the maintenance and disposal of equipment contaminated with antineoplastic agents; and measures for engineering controls, safe work practices, hygiene facilities or PPE appropriate in the circumstances.

### **Needle Safety Regulation 474/07**

This regulation requires the use of safety engineered needles or needless devices to replace conventional hollow bore needles when used for therapeutic, preventative, palliative, diagnostic, and cosmetic purposes.

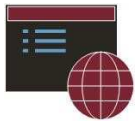
### **Environmental Protection Act (EPA)**

The regulation of many types of wastes such as biomedical waste, which includes cytotoxic waste, is regulated by the Ontario Ministry of the Environment and Climate Change through the EPA. Part V and O.Reg 347 General - Waste Management under the EPA relates to the regulation of waste. The Guideline C-4: The Management of Biomedical Waste in Ontario outlines the Ministry's expectations for waste management for both generators of biomedical waste and carriers and receivers of that waste.

### **Canadian Standards Association (CSA) Resources**

- CSA Standard Z316.6-14 "Sharps injury protection - Requirements and test methods - Sharps containers"
- CSA Standard Z317.10-15 "Handling of Waste Materials in Health Care facilities and Veterinary Health Facilities"
- CSA Standard Z317.2-15 "Special Requirements for Heating, Ventilation, and Air Conditioning (HVAC) Systems in Health Care Facilities"
- CSA Standard Z8000-11 (R2016) "Canadian health care facilities"
- CSA Standard Z94.3-15 "Eye and Face Protectors"
- CSA Standard Z94.3.1-16 "Guideline for Selection, Use, and Care of Eye and Face Protectors"
- CSA Standard Z94.4-11 (R2016) "Selection, use and care of respirators"

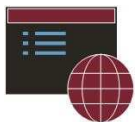
## Other Additional Resources



### **American Society of Health System Pharmacists (ASHP)**

ASHP Guidelines on Handling Hazardous Drugs, (2006).

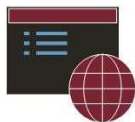
<http://www.ashp.org/DocLibrary/BestPractices/PrepGdlHazDrugs.aspx>



### **Association paritaire pour la santé et la sécurité du travail du secteur affaires sociales (ASSTSAS)**

Prevention Guide Safe Handling of Hazardous Drugs, (2007).

<http://www.irsst.qc.ca/media/documents/pubirsst/cg-002.pdf>



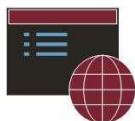
### **Cancer Care Ontario**

A Quality Initiative of the Program in Evidence-Based Care: Safe Handling of Cytotoxics (2013)

<https://www.cancercare.on.ca/common/pages/UserFile.aspx?fileId=293473>

Program in Evidence Based Care: Safe Handling of Parenteral Cytotoxics, (2007). (Currently under review).

<https://www.cancercare.on.ca/common/pages/UserFile.aspx?fileId=269042>



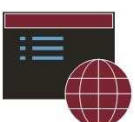
### **National Institute for Occupational Safety and Health (NIOSH)**

Hazardous Drug Exposures in Health Care

<http://www.cdc.gov/niosh/topics/hazdrug/>

NIOSH List of Antineoplastic and Other Hazardous Drugs in Healthcare Settings, 2016.

[https://www.cdc.gov/niosh/topics/antineoplastic/pdf/hazardous-drugs-list\\_2016-161.pdf](https://www.cdc.gov/niosh/topics/antineoplastic/pdf/hazardous-drugs-list_2016-161.pdf)



### **Occupational Safety and Health Administration (OSHA)**

Controlling occupational Exposure to Hazardous Drugs

[http://osha.gov/dts/osta/otm/otm\\_vi/otm\\_vi\\_2.html](http://osha.gov/dts/osta/otm/otm_vi/otm_vi_2.html)

OSHA; Hazardous Drugs Topic page

<http://osha.gov/SLTC/hazardousdrugs/index.html>

## Appendix A: Antineoplastic Drug Risk Assessment

The focus of this risk assessment is to *recognize* the potential hazards of antineoplastic drugs in the workplace, *assess* the hazards, address them in an effective manner and identify potential *control* options as part of the assessment. It is then best practice to reassess the risk (*evaluate*) with the control measures in place to determine if the program is adequately protecting workers. This is central to a successful health and safety program.

### Substance: Antineoplastic Drugs

Date: \_\_\_\_\_

Company Name: \_\_\_\_\_

Address:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Assessment Prepared By:

\_\_\_\_\_  
\_\_\_\_\_



## Recognize

Recognition of hazards is the first step to a healthy and safe workplace. For this assessment, the question of whether or not antineoplastic drugs are present, the area used, the frequency of use and quantity received on-site needs to be identified.

Are any clients currently on antineoplastic drugs\*?  Yes  No

\*See current NIOSH list, supplier information, (M)SDS if available and/or Compendium of Pharmaceuticals and Specialties (CPS) for drug product monographs.

### Area of Use:

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### Quantity and Frequency of Use:

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## Assess

The assessment of the identified hazard in terms of how the workers can be made ill by the hazard, how likely the hazard can cause harm and how severe the harm could be is the next step in the antineoplastic drug assessment.

Are any workers likely to be exposed?  Yes  No

### a) Assessment Questions

Ask these additional questions:

- *Does the antineoplastic drug enter the workplace as a parenteral (IV or injection), liquid, topical cream, or tablet form?*
- *Is the substance altered for drug administration purposes (i.e. are tablets crushed or dispersed in water for oral or G-tube feedings)?*
- *Is there a risk for the drug to be released into the work environment during use? Where (i.e. bedroom, kitchen, etc)?*
- *Which staff and approximately how many might be exposed?*
- *Which job tasks involve the handling and disposal of antineoplastic drugs and their associated wastes?*
- *Have policies and procedures related to antineoplastic drugs been reviewed in their entirety with workers?*
- *Has training related to antineoplastic drugs been provided to workers?*
- *What is the potential route of exposure (i.e. skin absorption, inhalation, ingestion or injection)?*
- *What are the potential harmful effects?*

What is the level of risk:  High  Medium  Low

### Notes:

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## Assessment Worksheet - Medication circuit outlining the applicable steps involving antineoplastic drugs

| Medication Circuit (all the applicable steps that the drug would travel into, through and out of the workplace) | Who                                | Potential Exposure Sources                         | Current Controls already in place       | Recommendations   |
|---|------------------------------------|--|---|---|
| Eg. Administration of drug or assisting client with medication administration                                   | Eg. Nurse, Personal Support Worker | Eg. Inhalation of particles, skin absorption, etc. | Eg. Engineering/Work Practice/PPE/other | Eg. Review any drug product monograph/(M)SDS, consult with pharmacy;<br><br>Engineering/Work Practice/PPE/other |
|   |                                    |  |   |   |
|   |                                    |  |   |   |
|   |                                    |  |   |   |
|   |                                    |  |   |   |
|   |                                    |  |   |   |
|   |                                    |  |   |   |
|   |                                    |  |   |   |



**b) Walkthrough**

After a review of the workplace health and safety policies and procedures and interviews with staff, a walkthrough of the workplace should occur.

Notes on:

Contamination:

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Waste disposal:

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Hygiene Facilities:

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Ventilation Systems:

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Conducting an Antineoplastic Drug Risk Assessment in Community Settings  
Storage Facilities:

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Administering Procedures:

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Housekeeping:

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Laundry:

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Personal Protective Equipment:

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Conducting an Antineoplastic Drug Risk Assessment in Community Settings  
Emergency Procedures:

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*Recommendations from walkthrough*

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**Control**

Controlling antineoplastic drug hazards is the third step in developing a health and safety program. It includes mitigating the risk to an acceptable level because eliminating the hazard (ideal in most situations) is not feasible for clinical reasons.

a) Are there any areas in the workplace where controls are required or improvements in controls are needed?

YES  NO

b) If YES, indicate these areas:

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**Overall Conclusion:**

Development of an antineoplastic drug exposure control program required or improvements needed in existing program:

*Place summary of all recommendations here*

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**Evaluate**

Reassess the risk (*evaluate*) with the control measures in place to determine if the antineoplastic drug control program is adequately protecting workers.

## **Appendix B: Antineoplastic Drugs – From the Healthcare and Residential Facilities Regulation 67/93 (where applicable)**

97.(1) The employer shall, in consultation with the joint health and safety committee or health and safety representative, if any, develop, establish and put into effect written measures and procedures to protect workers who may be exposed to antineoplastic agents or to material or equipment contaminated with antineoplastic agents.

(2) The measures and procedures required by subsection (1) shall include,

- (a) procedures for the storing, preparing, handling, using, transporting and disposing of antineoplastic agents and material contaminated with antineoplastic agents;
- (b) emergency procedures to be followed in the event of a worker's exposure to antineoplastic agents by a needle puncture, inhalation or skin contact;
- (c) procedures for the maintenance and disposal of equipment contaminated with antineoplastic agents;
- (d) measures for the use of engineering controls, work practices, hygiene practices and facilities or personal protective equipment appropriate in the circumstances; and
- (e) measures for the use of an appropriate biological safety cabinet for the preparation of antineoplastic agents.

(3) The employer shall provide training and instruction in the measures and procedures described in subsection (2) to workers who may be exposed to antineoplastic agents or to material or equipment contaminated with antineoplastic agents. O. Reg. 67/93, s. 97.

## **Appendix C: References**

Association paritaire pour la santé et la sécurité du travail du secteur affaires sociales (ASSTSAS); Prevention Guide Safe Handling of Hazardous Drugs, (2007).

Cancer Care Ontario; Safe handling of cytotoxics, (2013)

Environmental Protection Act R.S.O. 1990, Chapter E.19

General - Waste Management, Ontario Regulation 347

Health Care and Residential Facilities Regulation, Ontario Regulation 67/93.

National Institute for Occupational Safety and Health (NIOSH): NIOSH List of Antineoplastic and Other Hazardous Drugs in Healthcare Settings, 2016, (2016).

Occupational Health and Safety Act and Regulations R.S.O. 1990, c.O.1

Ontario Ministry of Environment and Climate Change; Guideline C-4 Guideline C-4: The Management of Biomedical Waste in Ontario. Retrieved from <https://www.ontario.ca/page/c-4-management-biomedical-waste-ontario>

Public Services Health & Safety Association (PSHSA); A Planning Guide to the Implementation of Safety-Engineered Medical Sharps, (2012).

Public Services Health & Safety Association (PSHSA); Safe Handling of Hazardous Drugs in Healthcare, (2013).

Workplace Safety and Prevention Services (WSPS): Workbook for Designated Substance Assessments, (2011).

## Glossary

**Administrative controls:** A category of hazard control that uses administrative/managerial involvement to help reduce exposures to hazards. Examples include job rotation, enrichment, work/rest scheduling or training.

**Antineoplastic drugs:** are chemotherapy drugs used to control or kill cancer cells; some are also used to treat non-cancerous conditions such as rheumatoid arthritis or psoriasis.

**Associated wastes:** Include (but not limited to) used incontinence products, used PPE, other cytotoxic waste (i.e. unused medication), client excreta (feces, urine, vomit) following administration, used plates and utensils, used cleaning mops and cloths, etc.

**Controls:** Designed to eliminate or reduce hazards or hazardous exposures. The categories of controls are: engineering, administrative and personal protective equipment (PPE).

**Cytotoxic drugs:** Substance which has a toxic effect on cells within the body.

**Drug product monograph:** Provides factual and scientific information on the drug product such as its properties, claims, indications, conditions of use; and any other useful information to ensure the optimal, safe and effective use of the product.

**Engineering Controls:** A category of hazard control that uses physical or engineering means to help eliminate or reduce a hazard. Examples include elimination, substitution, isolation, ventilation and design of the workplace/equipment.

**Hazardous drugs:** defined by the National Institute for Occupational Safety and Health (NIOSH) as those that exhibit one or more of the following six characteristics in humans and animals: carcinogenic, teratogenic toxicity or other developmental toxicity (affects the fetus), reproductive toxicity (affects fertility), organ toxicity at low doses, genotoxic (affects DNA or genetic material) or similar drugs (new drugs whose structure and toxicity are similar to those existing drugs based on one of the above five criteria).

**Industrial Hygiene:** The science devoted to the anticipation, recognition, evaluation and control of health hazards (i.e. hazardous physical, chemical or biological agents) in the workplace. Commonly referred to in Canada as occupational hygiene.

**(Material) safety data sheets:** Provides detailed information on the hazardous materials used, handled, stored and disposed of in the workplace.

**Medication circuit:** Includes all the applicable steps that the drug would travel into, out of and through a facility/workplace.



## Conducting an Antineoplastic Drug Risk Assessment in Community Settings

**Risk:** The probability of a worker suffering an injury or health problem, or of damage occurring to property or the environment as a result of exposure to or contact with a hazard.

**Safe-engineered medical sharps (SEMS):** are sharp medical devices or instruments designed to include safety features to help protect workers from injuries.

**Workplace:** Means any land, premises, location or thing at, upon, in or near which a worker works.





## Conducting an Antineoplastic Drug Risk Assessment in Community Settings

**Public Services Health and Safety Association (PSHSA)**

4950 Yonge Street, Suite 1800

Toronto, Ontario M2N 6K1

Canada

Telephone: 416-250-2131

Fax: 416-250-7484

Toll Free: 1-877-250-7444

Web site: [www.pshsa.ca](http://www.pshsa.ca)

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