

Safe Work Procedure for Preparation of Oral Liquid Hazardous Drugs

Site Applicability

All PHC sites where Hazardous Drugs are prepared outside of pharmacy, including acute, long term, and ambulatory care areas.

Practice Level

Basic:

- All clinicians with medication preparation and administration within their scope.

Requirements

A risk assessment must be in place for this Safe Work Procedure to be followed.

Need to Know

- The final dosage form of a drug is a unit-dose packaged drug, ready to be administered to the patient without any preparation by the clinician.
- Preparation is any action taken to alter a drug product by means other than compounding or repackaging.
- When a Hazardous Drug is provided in the final dosage form the clinician is to follow the precautions outlined in the Control Matrix of the Exposure Control Program (Appendix B) for administration.
- This document outlines the steps to follow when preparation of the Hazardous Drug is required outside of pharmacy.

Equipment and Supplies

- Accelerated hydrogen peroxide (i.e. Accel Intervention) wipes
- Oral syringe or 60 mL syringe for administration by enteric tube
- Plastic backed pad
- 4 X 4 Gauze
- PPE:
 - Two pairs of chemo-approved gloves
 - Chemo-approved gown
 - Eye and face protection (i.e. medical mask, and full face shield, or goggles)

Procedure

Work Surface Preparation:

1. For all procedures below, place plastic backed pad on surface on which the Hazardous Drug will be prepared.

Drawing up from a multi dose bottle with an adaptor:

1. Insert oral syringe into adaptor while multi dose bottle is sitting upright on a flat surface.
2. Invert the bottle and syringe.
3. Draw up dose.
4. Turn bottle upright before removing oral syringe.
5. Remove syringe and apply cap to syringe.

Maintain the bottle and syringe no higher than eye level throughout the procedure.

Pouring from a multi dose bottle without an adaptor:

1. Place medication cup on plastic backed pad and on a flat surface.
2. Pour approximately 25% over the prescribed dose slowly into medication cup (e.g. the prescribed dose is 3 mL pour 5 mL).
3. Wipe off any excess medication from the lip and neck of the bottle with gauze.
4. Select an oral syringe with at least 1.5 times the volume required for dose.
5. Draw up dose into syringe – no more than 75% of the volume of the syringe.

Transferring a hazardous drug to another device:

E.g. single unit dose cup to an oral syringe, into a syringe for administration through an enteric tube.

1. Open unit dose container.
2. Place container on prepared surface.
3. Select an oral syringe with at least 1.5 times the volume required for dose.
4. Draw up dose into syringe – no more than 75% of the volume of the syringe.

Diluting a hazardous drug:

1. Slowly transfer the medication to the diluent (e.g. juice).
2. Stir gently to mix

Thickening a hazardous drug:

1. Add the dose of medication to the thickening agent in a cup.
2. Stir gently to mix.

Work Surface Cleaning

1. After each procedure above the work surface must be cleaned and decontaminated using a two-step process using an accelerated hydrogen peroxide wipe (i.e. Accel Intervention).

Related Documents

- [Low Level Cleaning and Disinfection](#) (Infection Control)

References

Adapted from provincial Safe Work Procedure *Hazardous Drugs Safe Work Procedure: Preparing Oral Liquid Hazardous Drugs in Care Settings*

Appendices

- Appendix A: [Risk Assessment](#)
- Appendix B: [Providence Health Care Hazardous Drug Control Matrix](#)

Appendix A: Risk Assessment

A. Detailed Risk Assessment

Site:	All PHC acute, long term, and ambulatory sites	Unit:	Generic template
Date of assessment:	02-FEB-2022	Next review date (1 year)	02-FEB-2023
Name of Drug:		Drug Group (1 or 2)	Group 1 or 2
Route of Administration:	Oral or enteric tube	Formulation:	Oral liquid

- Reason pharmacy unable to provide final dosage form. Check all that apply:
 - ☒ Biological safety cabinet (BSC)/ Containment – Primary Engineering Control (C-PEC) not available
 - ☐ Pharmacy staff are not available (e.g. qualifications, outside of operational hours)
 - ☒ Transportation limitations/restrictions
 - ☒ Stability of drug
 - ☒ Anticipated urgency (i.e. urgent need for drug administration)
 - ☐ Other (describe):
- Proposed deviation from standard practice (e.g. drug will be crushed, mixed, combined etc.):
 - Drawing up from a multi dose container
 - Transferring to other administration device
 - Diluting
 - Thickening
- Based on the required type of preparation, what are the potential exposure routes (i.e. without control measures in place, how could staff be exposed?). Check all that apply:
 - ☒ Absorption (skin and eye contact)
 - ☐ Inhalation
 - ☒ Ingestion (eating/drinking)
 - ☐ Puncture (needle stick)
 - ☐ Other (describe):
- Based on the type of preparation and/or formulation, is there a risk of environmental contamination?
 - ☒ Yes
 - ☐ No

B. Alternate Control Measures for Development of Safe Work Procedures

Use the list below to identify control measures for the development of Safe Work Procedures (SWP) or reviewing an existing Safe Work Procedure for applicability. Note that when identifying control measures, **the hierarchy of controls must be considered**. In this process, engineering controls must be considered prior to or, in addition to, personal protective equipment (PPE).

The following lists can help to identify control options. Check all that applies and provide details in the SWP on how the control measures are utilized to prevent exposure. Refer to the Exposure Control Plan: Managing the Risks.

1. Proposed Engineering Control(s):

- ☐ Closed System Transfer Device
- ☐ Filtered Venting Device
- ☐ Pill crusher (enclosed system)
- ☐ Pill dissolver (enclosed system)
- ☐ Pill cutter (enclosed system)
- ☒ Other (describe): syringe adaptor affixed to multi dose bottles is applied by pharmacy
- ☐ None

2. Proposed Administrative Control(s):

- ☒ Education on the safe preparation technique and equipment
- ☒ Identification of a location(s) for preparation which minimizes the number of individuals (staff, clients etc.) potentially exposed to hazardous drugs.
- ☒ Methods used for minimizing surface contamination identified (e.g. using dedicated equipment, put an absorbent pad down)
- ☒ Products and processes are in place for cleaning space post-preparation
- ☒ Drug transportation and storage practices identified
- ☒ Hazardous Drugs Spill kit is available and staff are trained on how to use it.

3. Required PPE (refer to ECP Control Matrix, Decision Support Tools, and consider all potential routes of exposure):

- ☒ Chemo-approved gloves (two pairs)
- ☒ Chemo-approved gown
- ☒ Eye/face protection
- ☐ Respiratory protection
- ☐ Other (describe):

C. Safe Work Procedure







A Safe Work Procedure must be written considering all of the factors identified in both the **A. Detailed Risk Assessment** and **B. Alternative Control Measures** sections above. The SWP must be approved as per this risk assessment process prior to the administration of the drug.

Recommendation for SWP:

- ☒ Utilize a standardized Safe Work Procedure, all components are achievable.
- ☐ Modify an existing standardized Safe Work Procedure.
- ☐ Develop a unit or area based Safe Work Procedure.
- ☐ No appropriate alternate practices or SWP can be identified, consult with your Health Authority Hazardous Drugs Working Group.

Risk Assessment and Safe Work Procedure Developed By:	
Occupational Health and Safety	Hygienist, Occupational Health and Safety
Pharmacy	Pharmacy Coordinator
Professional Practice and Nursing	Practice Consultant
Risk Assessment and Safe Work Procedure Endorsed By:	
Clinical Operations	Executive Director Acute Care Program Director Seniors Care
Occupational Health and Safety	Director, Occupational Health and Safety
Professional Practice and Nursing	Director, Professional Practice and Nursing
Pharmacy	Director, Pharmacy (Acute Care) Director, Pharmacy (Long Term Care)




Appendix B: Providence Health Care Hazardous Drug Control Matrix

PROVIDENCE HEALTH CARE – HAZARDOUS DRUGS CONTROL MATRIX						
BC Hazardous Drug Control Matrix Nursing Section		Group 1 				
		Parenteral (IV, I/e, IM, SUBCUT, IT, IP)	Oral Solid (Tablet, Capsule)	Oral Liquid	Topical, Rectal & Vaginal	Implants and Ophthalmic
LABELLING MEDICATION		  				
TRANSPORT IN FACILITY		Do not use tube system  Do not use tube system  Do not use tube system if liquid				
PREPARATION OF DRUGS BY NURSING		See Safe Work Procedures				
PERSONAL PROTECTIVE EQUIPMENT (PPE)						
PRIMING IV LINES		Do not prime IV lines with hazardous drugs				
MEDICATION ADMINISTRATION Drugs in final dosage form (including when using CSTDs)	PPE	Gloves	two pairs of chemo- approved gloves	one pair of chemo-approved gloves	two pairs of chemo-approved gloves	
		Gown	chemo-approved gown	None	chemo-approved gown if risk of splash	chemo-approved gown
		Eye/Face	eyeface protection	None	eyeface protection if risk of splash	eye protection
		N95	None			N95 Required
WORK SURFACE CLEANING		Wear two pairs of chemo-approved gloves, chemo-gown, eyeface protection if risk of splash Use Accelerated Hydrogen Peroxide 0.5% (e.g. Accel Intervention wipes™)				
PRECAUTIONARY PERIOD Place precautionary signage at the bedside or entrance to client room		The precautionary period is 48 hours following each administration of a Group 1 HD During precautionary period o Required PPE: two pairs of chemo-approved gloves, chemo-approved gown, eyeface protection if risk of splash for any activities for which there is a risk of contact with BBF Outside precautionary period o Follow routine precautions when handling blood and body fluids				
LABORATORY		During an individual's precautionary period all blood, urine and stool samples; other body fluids visibly contaminated with blood (except swabs and sputum) and tissues or organs not in fixatives must be labelled with a laboratory HD1 label All laboratory specimens from a patient in the precautionary period are to be placed in an outer sealed plastic bag. Blood specimens may be tubed, and must be labelled and placed in two sealed bags, with the outer bag labelled				
LAUNDRY		During precautionary period: All linen to be placed in Group 1 HD labelled laundry bag o Required PPE: two pairs of chemo-approved gloves, chemo-approved gown, eyeface protection if risk of splash Outside precautionary period: All linen to be placed in regular laundry bag o Required PPE: Follow routine practices				
		Drug Waste		Sharps	BBF Waste	Other Waste (e.g. PPE and packaging)
SPILL MANAGEMENT Hazardous drug spill kits in all areas where hazardous drugs are handled		Intact solid dosage form Required PPE: one pair of chemo-approved gloves All other dosage forms: Manage spills according to Hazardous Drug Spill Procedures for size of spill. See Appendix L in ECP		Manage spills according to Hazardous Drug Spill Cleanup Procedures for size of spill. See Appendix L in ECP		
WASTE MANAGEMENT Acute/Long Term Care (i.e., in facility)		Controlled Substances: Pharmaceutical Waste Bin Non-Controlled Substances: Cytotoxic Waste Bin Required PPE: two pairs of chemo-approved gloves chemo-approved gown if risk of splash eyeface protection if risk of splash		Cytotoxic Sharps Container	Where possible, disposed of through the sewer. Where not disposed of through sewer, use a leak-proof cytotoxic container.	Cytotoxic container
Acronyms: CSTD = Closed System Transfer Device IV = Intravenous I/e = Intravascular IM = Intramuscular SUBCUT = Subcutaneous IT = Intrathecal IP = Intraperitoneal BBF = Blood and Body Fluid HD = Hazardous Drug						

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PROVIDENCE HEALTH CARE – HAZARDOUS DRUGS CONTROL MATRIX

BC Hazardous Drug Control Matrix Nursing Section		Group 2 								
		Parenteral (IV, IVe, IM, SUBCUT, IT, IP)	Oral Solid (Tablet, Capsule)	Oral Liquid	Topical, Rectal & Vaginal	Implants and Ophthalmic	Inhalation Therapy			
LABELLING MEDICATION		<div><div>Precautions Required</div><div>Hazardous Drug GROUP 2</div></div> <div></div> <div></div>								
TRANSPORT IN FACILITY		Do not use tube system		Do not use tube system		Do not use tube system if liquid				
		<ul style="list-style-type: none">If transporting drugs in a reusable outer container - two pairs of chemo-approved gloves are requiredIf transporting drugs in a disposable outer container (e.g. plastic bag), PPE is not requiredEnsure a Hazardous Drugs spill kit accompanies drug transport or is readily available								
PREPARATION OF DRUGS BY NURSING	PERSONAL PROTECTIVE EQUIPMENT (PPE)	See Safe Work Procedures								
PRIMING IV LINES		<ul style="list-style-type: none">Do not prime IV lines with hazardous drugs								
MEDICATION ADMINISTRATION Drugs in final dosage form (including when using CSTDs)	PPE	Gloves	two pairs of chemo- approved gloves	one pair of chemo- approved gloves	two pairs of chemo-approved gloves					
		Gown	chemo-approved gown	None	chemo-approved gown if risk of splash		None	Chemo approved gown		
		Eye/Face	eye/face protection if risk of splash	None	eye protection if risk of splash		None	eye protection		
		N95	None				N95 required			
WORK SURFACE CLEANING		<ul style="list-style-type: none">Wear two pairs of chemo-approved gloves, chemo-gown, eye/face protection if risk of splashUse Accelerated Hydrogen Peroxide 0.5% (e.g. Accel Intervention wipes™)								
PRECAUTIONARY PERIOD		<ul style="list-style-type: none">Not applicable to Group 2 HD								
LABORATORY		<ul style="list-style-type: none">Use routine practices for collection, labelling and transport								
LAUNDRY		<ul style="list-style-type: none">All linen to be placed in regular laundry bags								
		Drug Waste		Sharps		BBF Waste		Other Waste (e.g. PPE and packaging)		
SPILL MANAGEMENT		Intact solid dosage form Required PPE: one pair of chemo-approved gloves			<ul style="list-style-type: none">Follow routine precautions					
Hazardous drug spill kits in all areas where hazardous drugs are handled		All other dosage forms: Manage spills according to Hazardous Drug Spill Procedures for size of spill. See Appendix L in ECP								
WASTE MANAGEMENT		Controlled Substances: Pharmaceutical Waste Bin			Regular Sharps Container		Where possible, disposed of through the sewer. Where not disposed of through sewer use regular garbage or anatomical or biohazardous waste per usual practices.		Regular garbage	
		Non-Controlled Substances: Cytotoxic Waste Bin								
Acute/Long Term Care (i.e., in facility)		Required PPE: <ul style="list-style-type: none">one pair of chemo-approved gloveschemo-approved gowneyeface protection if risk of splash			<ul style="list-style-type: none">Follow routine practices and standard procedures					

Acronyms: CSTD = Closed System Transfer Device IV = Intravenous IVe = Intravesicular IM = Intramuscular SUBCUT = Subcutaneous IT = Intrathecal IP = Intraperitoneal BBF = Blood and Body Fluid HD = Hazardous Drug

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