Hazardous Medication List

Reducing occupational exposure to hazardous medications for **ALL STAFF**

created by: the Provincial Hazardous Medication Committee (PHMC)

Date: 18 March 2025 v2.8

Contents

Alberta Health Services / Covenant Health Hazardous Medication Classification

KNOWN Hazard Medication	These medications are mainly antineoplastic medications as per National Institute for Occupational Safety and Health (NIOSH) Table 1, predominantly used in the treatment of cancer (chemotherapy) and in some cases, used for the treatment of other conditions (e.g., psoriasis, rheumatoid arthritis). KNOWN hazard medications are carcinogenic, cytotoxic and/or have manufacturer special handling information (MSHI) to protect workers handling the medications. Not all KNOWN hazard medications are cytotoxic or anti-neoplastic. These medications present a serious risk to the health or welfare of healthcare staff during occupational exposure.
POTENTIAL Hazard Medication	These medications meet one or more of NIOSH's criteria for a hazardous medication but are not drugs that are known to be carcinogenic or probably carcinogenic.
REPRODUCTIVE Hazard Medication	These are mainly non-antineoplastic medications that only meet the NIOSH criteria as a developmental and/or reproductive hazard. They are not drugs that are known or probable carcinogenic agents. These medications may present an occupational exposure risk only for certain individuals; staff of childbearing years **regardless of gender** with a potential to conceive or fertilize, women who are pregnant, or women who are breast feeding. Should staff members have specific questions, they should discuss with their supervisors in consultation with their personal physicians and Workplace Health and Safety (WHS) to assess the risk of occupational exposure to these medications and the option of temporarily refraining from handling hazardous medications. Certain Reproductive Hazard Medications may only be applicable to a subset of the Reproductive population; see Key Points on the next page.

Hazardous Medication List – Key Points

	Indicates the medication is a **CYTOTOXIC** agent. Cytotoxic refers to a substance or process which results in cell damage or cell death.
*	Indicates **REPRODUCTIVE Hazard Medications** applicable to a subset of the reproductive population. • Some REPRODUCTIVE Hazard medications have been identified to have specific parameters and may only be applicable to a subset of the reproductive population. • Refer to Appendix A for more detailed medication-specific information.
	**Operational challenges have been identified. Please reach out to hazardousmedication@ahs.ca for more information.**

The following products are NOT listed on the Hazard Medication List, but may require special handling precautions:

- Salts, PEGylated and liposomal medication **-** only the *parent compound* is listed (e.g., doxorubicin)
- Combination products containing a hazardous medication. (e.g., spironolactone-hydrochlorothiazide)
- Investigational / Clinical Trial medication as toxicological data is often incomplete or unavailable, **except** where current data indicates a hazardous risk. Follow the study protocol for safe handling precautions.
- Chemicals and / or raw powders; follow the Safety Data Sheet (SDS) for safe handling precautions.
- Radiopharmaceuticals: Nuclear Medicine has policies and procedures for the handling of these products

The Hazardous Medication List will be reviewed and updated on a periodic basis as new medication or information becomes available.

Refer to Insite for the most current version.

Summary of changes:

NEW

- **Removal of one (1) medication from list**
  - Remove epcoritamab from KNOWN hazard list
- **Addition of three (3) new medications to the list, indicated by bold BLUE type.**
  - 1 classified as POTENTIAL hazard (capivasertib)
  - 2 classified as REPRODUCTIVE hazard (eflornithine, lixisenatide)

HAZARDOUS MEDICATIONS

COMPLETE List:

K = KNOWN, P = POTENTIAL, R = REPRODUCTIVE

A	
abacavir	P
abemaciclib	R
abiraterone	K
acalabrutinib	K
acitretin	R
AFAtinib	K
alefacept	P
alitretinoin	R
alpelisib	R
altretamine	K
ambrisentan	R
amifampridine	P
amifostine	R
amsacrine	K
anastrozole	K
apalutamide	P
apomorphine	P
arsenic trioxide	K
asciminib	R
avacopan	R
avapritinib	R
aXitinib	K
azaCITIDine	K
azaTHIOprine	K
B	
bacillus calmette-guérin (BCG) ◆	K
baricitinib	P
belantamab mafodotin	K
belinostat	K
belumosudil	R
belzutifan	R
bendamustine	K
benznidazole	R
bexarotene	K
bicalutamide	K
bleomycin	K
blinatumomab	P
bortezomib	K
bosentan	R
bosutinib	K
brentuximab vedotin	K
brigatinib	R
buserelin	K
busulfan	K
C	
cabazitaxel	K
cabergoline	R
cabozantinib	K
capecitabine	K
capivasertib	P
capmatinib	R
carBAMazepine	P
carbetocin ✱	R
CARBOplatin	K
carboprost	R
carfilzomib	K
carmustine	K
cenobamate	R
ceritinib	R
cetrorelix acetate	R
chlorambucil	K
chloramphenicol	K
chlormethine	K
choriogonadotropin alpha	R
cidofovir	K
CISplatin	K
cladribine	K
clevidipine	R
cloBAZam	R
clofarabine	K
clofazimine	R
clomiPHENE	R
clonazePAM	R
cobimetinib	R
colchicine	R
crizotinib	K
cyclophosphamide	K
cycloSPORINE	K
cyproterone	P
cytarabine	K
D	
daBRAFenib	K
dacarbazine	K
dacomitinib	R
DACTINomycin	K
danazol	R
darolutamide	P
daSATinib	K
DAUNOrubicin	K
decitabine	K
deferiprone	P
degarelix	K
dexMEDEtomidine	R
dexrazoxane	K
diethylstilbestrol	K
dihydroergotamine	R
dinoprostone	R
divalproex sodium	R
DOCEtaxel	K
DOXOrubicin	K
dronedarone	R
drospirenone-estetrol	K
dutasteride	R
E	
edaravone	R
eflornithine	R
enasidenib	P
encorafenib	K
enfortumab vedotin	K
entecavir	P
entrectinib	P
enzalutamide	K
epiRUBicin	K
erdafitinib	P
ergonovine (ergometrine) / methylergonovine	R
eriBULin	K
erlotinib	K
eslicarbazepine	R
estradiol	P
estramustine	K
estrogen - conjugated	K
estrogen - esterified	K
estrogen/progesterone combinations	K
estropipate	P
etoposide	K
everolimus	K
evinacumab	R
exemestane	K
exenatide	P
F	
fedratinib	R
finasteride	R
fingolimod	P
floxuridine	K
fluCONazole	R
fluCYTOsine	R
fludarabine	K
fluorouracil (5FU)	K
fluoxymesterone	P
flutamide	K
fosphenytoin	P
fostamatinib	R
fruquintinib	R

Bold BLUE type indicates a medication newly listed as of March 2025

✱ Reproductive Hazard Medication applicable to a subset of the reproductive population. See Appendix A

O Indicates a special circumstance. See information on page iv.

◆, ■, and ◈ See special handling precautions on page 8.

HAZARDOUS MEDICATIONS

COMPLETE List (continued):

K = KNOWN, P = POTENTIAL, R = REPRODUCTIVE

fulvestrant	K
G / H	
ganaxolone	R
ganciclovir C	K
ganirelix acetate	R
gefitinib	K
gemcitabine C	K
gemtuzumab ozogamicin C	K
gilteritinib	P
glasdegib	P
gonadotropin, chorionic	R
goserelin	K
guadecitabine C	K
histrelin	K
hydroxyUREA C	K
I	
icatibant	R
IDArubicin C	K
ifosfamide C	K
iMAtinib	K
infigratinib	P
inotuzumab ozogamicin C	K
irinotecan C	K
ISOtretinoin	R
ivabradine	R
ixabepilone C	K
ixazomib C	K
J / K / L	
larotrectinib	R
leflunomide	P
lenalidomide	K
lenvatinib	R
letrozole	K
leuprolide	K
levonorgestrel	P
liraglutide recombinant	P
lixisenatide	R
lomitapide	R
lomustine C	K
lonafarnib	R
loncastuximab tesirine C	K
lorlatinib	R
lurbinectedin C	K
M	
macitentan	R
maribavir	R
mavacamten	P
mecasermin	K
Medroxy-PROGESTERone	P
megestrol	K
melphalan C	K
melphalan flufenamide C	K
menotropins	R
mercaptopurine C	K
methIMAzole	P
methotrexate C	K
methylTESTOSTERone	R
midostaurin C	K
miFEPRIStone	R
miltefosine	R
mipomersen	P
mirvetuximab soravtansine C	K
miSOPROStol	R
mitoMYcin C	K
mitotane C	K
mitoXANTRONE C	K
momelotinib	R
mycophenolate mofetil	P
mycophenolic acid	P
N	
nab-sirolimus	P
nafarelin	R
nelarabine C	K
neratinib	P
nevirapine	P
niLOtinib	K
niraparib C	K
nirogacestat	R
nitrogen mustard (mechlorethamine)	K
O	
olaparib	P
omacetaxine C	K
onasemnogene abeparvovec ■	K
ospemifene	P
oxaliplatin C	K
oxandrolone	R
OXcarbazepine	P
oxytocin ✱	R
P	
PACLitaxel C	K
pacritinib	R
palifermin	P
palovarotene	R
pamidronate	R
panobinostat C	K
PAROxetine	R
pasireotide	R
PAZOPanib	K
pegcetacoplan	P
peginesatide	R
pegvaliase	P
PEMEtrexed C	K
pemigatinib	P
pentamidine ◈	R
pentetate calcium	R
pentostatin C	K
phenoxybenzamine	P
phenyTOIN	P
pipobroman C	K
piritrexim isethionate C	K
plerixafor	R
polatuzumab vedotin C	K
pomalidomide	K
PONATinib	K
ponesimod	P
porfimer C	K
posaconazole	R
PRALAtrexate C	K
pralsetinib	P
procarbazine C	K
progesterone	P
progestins	P
propylthiouracil	P
Q / R	
raloxifene	P
raltitrexed C	K
rasagiline	P
ravulizumab	R
regorafenib	K
relugolix	R
remdesivir	P
repotrectinib	P
ribavirin	R
ribociclib	R
riociguat	R
ripretinib	R
risdiplam	K
ritlecitinib	P
romiDEPsin C	K
S	
sacituzumab govitecan C	K
selinexor	P
selpercatinib	R
selumetinib	R
semaglutide	K
setmelanotide	R
siponimod	R

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O Indicates a special circumstance. See information on page iv.

◆, ■, and ◈ See special handling precautions on page 8.

COMPLETE List (continued):

K = KNOWN, P = POTENTIAL, R = REPRODUCTIVE

sirolimus	P
sodium phenylbutyrate - ursodoxicoltaurine	R
sonidegib	R
SORAfenib	K
sotorasib	P
spironolactone	P
streptozocin	K
SUNItinib	K
T	
tacrolimus	P
tagraxofusp	K
talazoparib	K
tamoxifen	K
temazepam	R
temozolomide	K
temsirolimus	K
teniposide	K
tepotinib	R
teriflunomide	P
testosterone	R
thalidomide	K
thioguanine	K
thiotepa	K
tirzepatide	K
tisotumab vedotin	K
tofacitinib	P
topiramate	R
topotecan	K
toremifene	R
trabectedin	K
trametinib	K
trastuzumab	R
trastuzumab deruxtecan	K
trastuzumab emtansine	K
treosulfan	K
tretinoin	R
trifluridine / tipiracil (combination only)	K
triptorelin	K
tucatinib	R
U / V	
ulipristal	R
upadacitinib	P
uracil mustard	K
urofollitropin	R
valGANciclovir	K
valproate / valproic acid	R
valrubicin	K
vanDETanib	K
vemURAFenib	K
venetoclax	K
vigabatrin	R
vinBLAStine	K
vinCRIStine	K
vinorelbine	K
vismodegib	K
voretigene neparvovec ■	K
voriconazole	R
vorinostat	K
W / X / Y / Z	
warfarin	R
zanubrutinib	K
zidovudine	P
ziprasidone	R
ziv- aflibercept	K
zoledronic acid	R
zonisamide	R

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◆, ■, and ◈ See special handling precautions on page 8.

KNOWN HAZARDOUS MEDICATIONS

KNOWN Hazard Medications

A	
abiraterone	
acalabrutinib	C
AFAtinib	
altretamine	C
amsacrine	C
anastrozole	
arsenic trioxide	C
aXitinib	
azaCITIDine	C
azaTHIOprine	C
B	
bacillus calmette-guérin (BCG)	◆
belantamab mafodotin	C
belinostat	C
bendamustine	C
bexarotene	
bicalutamide	
bleomycin	C
bortezomib	C
bosutinib	
brentuximab vedotin	C
buserelin	
busulfan	C
C	
cabazitaxel	C
cabozantinib	
capecitabine	C
CARBOplatin	C
carfilzomib	C
carmustine	C
chlorambucil	C
chloramphenicol	
chlormethine	C
cidofovir	
CISplatin	C
cladribine	C
clofarabine	C
crizotinib	
cyclophosphamide	C
cycloSPORINE	
cytarabine	C
D	
daBRAFenib	
dacarbazine	C
DACTINomycin	C
daSATinib	
DAUNOrubicin	C
decitabine	C
degarelix	
dexrazoxane	C
diethylstilbestrol	
DOCEtaxel	C
DOXOrubicin	C
drospirenone-estetrol	
E	
encorafenib	
enfortumab vedotin	C
enzalutamide	
epiRUBicin	C
eriBULin	C
erlotinib	
estramustine	C
estrogen - conjugated	
estrogen - esterified	
estrogen / progesterone combinations	
etoposide	C
everolimus	C
exemestane	
F	
floxuridine	C
fludarabine	C
fluorouracil (5FU)	C
flutamide	
fulvestrant	
G / H	
ganciclovir	C
gefitinib	
gemcitabine	C
gemtuzumab ozogamicin	C
goserelin	
guadecitabine	C
histrelin	
hydroxyUREA	C
I	
IDArubicin	C
ifosfamide	C
iMAtinib	
inotuzumab ozogamicin	C
irinotecan	C
ixabepilone	C
ixazomib	C
J / K / L	
lenalidomide	
letrozole	
leuprolide	
lomustine	C
loncastuximab tesirine	C
lurbinectedin	C
M	
mecasermin	
megestrol	
melphalan	C
melphalan flufenamide	C
mercaptopurine	C
methotrexate	C
midostaurin	C
mirvetuximab soravtansine	C
mitoMYcin	C
mitotane	C
mitoXANTRONE	C
N	
nelarabine	C
niLOtinib	
niraparib	C
nitrogen mustard (mechlorethamine)	
O	
omacetaxine	C
onasemnogene abeparvovec	■
oxaliplatin	C

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✱ Reproductive Hazard Medication applicable to a subset of the reproductive population. See Appendix A

O Indicates a special circumstance. See information on page iv.

◆, ■, and ◈ See special handling precautions on page 8.

KNOWN Hazard Medications (Cont.)

P	
PACLitaxel	C
panobinostat	C
PAZOPanib	
PEMEtrexed	C
pentostatin	C
pipobroman	C
piritrexim isethionate	C
polatuzumab vedotin	C
pomalidomide	
PONATinib	
porfimer	C
PRALAtrexate	C
procarbazine	C
Q / R	
raltitrexed	C
regorafenib	
risdiplam	
romiDEPsin	C
S	
sacituzumab govitecan	C
semaglutide	
SORAfenib	
streptozocin	C
SUNItinib	
T	
tagraxofusp	C
talazoparib	C
tamoxifen	
temozolomide	C
temsirolimus	
teniposide	C
thalidomide	
thioguanine	C
thiotepa	C
tirzepatide	
tisotumab vedotin	C
topotecan	C
trabectedin	C
trametinib	
trastuzumab deruxtecan	C
trastuzumab emtansine	C
treosulfan	C
trifluridine / tipiracil (combination only)	C
triptorelin	
U / V	
uracil mustard	C
valGANciclovir	
valrubicin	C
vanDETanib	
vemURAFenib	
venetoclax	C
vinBLAStine	C
vinCRIStine	C
vinorelbine	C
vismodegib	
voretigene neparvovec	■
vorinostat	C
W / X / Y / Z	
zanubrutinib	
ziv- aflibercept	

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◆, ■, and ◈ See special handling precautions on page 8.

POTENTIAL HAZARD MEDICATIONS

POTENTIAL Hazard Medication List:

A
abacavir
alefacept
amifampridine
apalutamide
apomorphine
B
baricitinib
blinatumomab
C
capivasertib
carBAMazepine
cyproterone
D
darolutamide
deferiprone
E
enasidenib
entecavir
entrectinib
erdafitinib

estradiol
estropipate
exenatide
F
fingolimod
fluoxymesterone
fosphenytoin
G / H
gilteritinib
glasdegib
I
infigratinib
J / K / L
leflunomide
levonorgestrel
liraglutide recombinant
M
mavacamten
medroxyPROGESTERone
methIMAzole
mipomersen

mycophenolate mofetil
mycophenolic acid
N
nab-sirolimus
neratinib
nevirapine
O
olaparib
ospemifene
OXcarbazepine
P
palifermin
pegcetacoplan
pegvaliase
pemigatinib
phenoxybenzamine
phenyTOIN
ponesimod
pralsetinib
progesterone
progestins

propylthiouracil
Q / R
raloxifene
rasagiline
remdesivir
repotrectinib
ritlecitinib
S
selinexor
sirolimus
sotorasib
spironolactone
T
tacrolimus
teriflunomide
tofacitinib
U / V
upadacitinib
W / X / Y / Z
zidovudine

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O Indicates a special circumstance. See information on page iv.

◆, ■, and ◈ See special handling precautions on page 8.

REPRODUCTIVE HAZARD MEDICATIONS

REPRODUCTIVE Hazard Medication List:

(applicable to staff members of any gender with reproductive potential)

A
abemaciclib
acitretin
alitretinoin
alpelisib
ambrisentan
amifostine
asciminib
avacopan
avapritinib
B
belumosudil
belzutifan
benznidazole
bosentan
brigatinib
C
cabergoline
capmatinib
carbetocin ✱
carboprost
cenobamate
ceritinib
cetrorelix acetate
choriogonadotropin alpha
clevidipine
cloBAZam
clofazimine
clomiPHENE
clonazePAM
cobimetinib
colchicine
D
dacomitinib
danazol
dexMEDEtomidine
dihydroergotamine
dinoprostone
divalproex sodium
dronedarone
dutasteride
E
edaravone

eflornithine
ergonovine (ergometrine) / methylergonovine
eslicarbazepine
evinacumab
F
fedratinib
finasteride
fluCONazole
fluCYTOsine
fostamatinib
fruquintinib
G / H
ganaxolone
ganirelix acetate
gonadotropin, chorionic
I
icatibant
ISOtretinoin
ivabradine
J / K / L
larotrectinib
lenvatinib
lixisenatide
lomitapide
lonafarnib
lorlatinib
M
macitentan
maribavir
menotropins
methylTESTOSTERone
miFEPRIStone
miltefosine
miSOPROStol
momelotinib
N
nafarelin
nirogacestat
O
oxandrolone
oxytocin ✱

P
pacritinib
palovarotene
pamidronate
PARoxetine
pasireotide
peginesatide
pentamidine ◈
pentetate calcium
plerixafor
posaconazole
Q / R
ravulizumab
relugolix
ribavirin
ribociclib
riociguat
ripretinib
S
selpercatinib
selumetinib
setmelanotide
siponimod
sodium phenylbutyrate - ursodoxicoltaurine
sonidegib
T
temazepam
tepotinib
testosterone
topiramate
toremifene
trastuzumab
tretinoin
tucatinib
U / V
ulipristal
urofollitropin
valproate / valproic acid
vigabatrin
voriconazole
W / X / Y / Z
warfarin

ziprasidone
zoledronic acid
zonisamide

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Special Handling Considerations for Specified Hazard Medications

◆ Bacillus Calmette-Guérin vaccine **(BCG)**

BCG, although classified as a vaccine, is used in the treatment of certain cancers. BCG should be prepared with aseptic techniques. To avoid cross-contamination, parenteral drugs should not be prepared in areas where BCG has been prepared. A separate area for the preparation of BCG suspension is recommended. All equipment, supplies, and receptacles in contact with BCG should be handled and disposed of as biohazardous. If preparation cannot be performed in a containment device, then respiratory protection, gloves, and a gown should be worn to avoid inhalation or contact with BCG organisms. Follow special handling guidelines.

BCG requires specialized clean up if spilled. AHS/COV staff: see the Hazardous Medication Insite page to access Lippincott Procedures: *Hazardous medication spill response* for information on handling hazardous medication spills including BCG.

Monoclonal Antibodies **(mAbs)**

While many monoclonal antibodies are classified by American Hospital Formulary Service (AHFS) as 10:00 antineoplastic medication, they are not typically classified as hazardous medication by NIOSH.

Monoclonal antibodies included on the Hazardous Medication List require handling precautions as per the PPE Guide.

◈ Pentamidine

For inhalation (administered by respiratory therapist). AHS/COV staff: follow special handling guidelines on the Respiratory Therapy Insite Page linked under Resources on the Hazardous Medication Insite page.

■ Gene therapy

These products require specialized clean up if spilled. AHS/COV staff: see the Hazardous Medication Insite page to access Lippincott Procedures: Hazardous medication spill response for information on handling hazardous medication spills including gene therapies. Others, please contact the Hazardous Medication team at hazardousmedication@albertahealthservices.ca for details.

Extended Precautionary Period for Hazard Medications

A. KNOWN Hazard Medications Requiring PPE for Longer than 48 Hours[i]

Some hazardous medications require a longer precautionary period based on the time of excretion from the body. The following hazardous medications require the appropriate PPE from the start of the time of administration of the KNOWN hazard medication up to the number of days listed. [ii]

Hazard Medication	Suggested precautionary period
brentuximab vedotin	10 days
carmustine	7 days
cyclophosphamide	5 days
DOXOrubicin	7 days
enfortumab vedotin	7 days
eriBULin mesylate	5 days
etoposide	5 days
imatinib mesylate	7 days
inotuzumab ozogamicin	28 days
ixabepilone	5 days
lurbinectedin	5 days
midostaurin	42 days
mirvetuximab soravtansine	10 days
mitoXANTRONE	7 days
niraparib	5 days
onasemnogene abeparvovec	28 days
polatuzumab vedotin	28 days
semaglutide	14 days
talazoparib	7 days
tisotumab vedotin	7 days
trabectedin	14 days
trastuzumab deruxtecan	28 days
voretigene neparvovec	14 days
vinCRIStine	7 days
vinorelbine	5 days

B. POTENTIAL and REPRODUCTIVE Hazard medications.

POTENTIAL and REPRODUCTIVE RISK hazard medications on the AHS Hazardous Medication List do not require a precautionary period.

This document is subject to change.

Appendix A: Reproductive Population Subset

(**REPRODUCTIVE** Hazard medications with special handling parameters are indicated with an asterisk in the hazardous medication list.)

Hazardous Medication	Background	Mechanism of Action	PPE Recommendations
oxytocin	Oxytocin has been identified as a hazard medication by NIOSH. It is considered a Table 2, primarily having adverse reproductive effects. PPE requirements are only applicable to a subset of the reproductive population.	**Oxytocin stimulates uterine contraction** by activating G-protein-coupled receptors that trigger increases in intracellular calcium levels in uterine myofibrils. Oxytocin also increases local prostaglandin production, further stimulating uterine contraction. Oxytocin has specific receptors in the muscle lining of the uterus and the receptor concentration increases greatly during pregnancy, reaching a maximum in early labor at term.	Oxytocin is considered a REPRODUCTIVE Risk Medication. Per the references, the reproductive risk is identified to be in pregnant women in the 2 or 3rd trimester. It is recommended that the Hazardous Medication PPE described in the Guide be worn by this select group. Other individuals in the reproductive population (as described in the guide) may also choose to wear the PPE when handling oxytocin if they prefer
carbetocin	Carbetocin has not been identified as a hazard medication by NIOSH as it is not available in the USA, however PHMC has determined it should be handled in a similar manner as oxytocin. PPE requirements are only applicable to a subset of the reproductive population.	**Carbetocin is a synthetic analogue of oxytocin.** Carbetocin binds oxytocin receptors located in uterine smooth muscle producing rhythmic uterine contractions characteristic to deliver, as well as increasing both the frequency of existing contractions and uterine tone. Enhances uterine involution early in postpartum.	Carbetocin is considered a REPRODUCTIVE Risk Medication. Per the references, the reproductive risk is identified to be in pregnant women in the 2 or 3rd trimester. It is recommended that the Hazardous Medication PPE described in the Guide be worn by this select group. Other individuals in the reproductive population (as described in the guide) may also choose to wear the PPE when handling carbetocin if they prefer.

If you require more detailed information, please contact hazardousmedication@ahs.ca

This document is subject to change

Appendix B: AHS Classification of Hazardous Medications

AHS Hazardous Medication List Review

NIOSH has not published a Hazardous Drug list since 2016. Although a 2018 list was drafted it was never published, and a 2020 list remains in draft form. The Provincial Hazardous Medication Committee (PHMC) recognized that many new medications have come to market since the last NIOSH list and staff needs to be able to handle these medications safely. As such, a working group within PHMC has developed the AHS Hazardous Medication List, using NIOSH publications as the basis for review.

The general process is described below:

1. Review the references:
    a. Is there a Manufacturer Special Handling Information (MSHI) attached?
    b. Do the references mention carcinogenicity?
    c. Do the references mention cytotoxicity?

    If YES place on AHS KNOWN Hazardous Medication List unless it is a monoclonal antibody (mAb). If NO **OR** a mAb, proceed to step 2.

2. If the medication is a mAb, review for specific hazardous handling:
    a. Is there specific hazardous handling (safe handling) information that indicates a risk to handle this medication? If YES place on AHS KNOWN Hazardous Medication List. If NO proceed to step 3.

3. Determine if the medication meets the NIOSH definition of a hazardous drug but does NOT have a MSHI and the information includes one or more of the types of toxicity described in the NIOSH definition including:
    - developmental toxicity (including teratogenicity)
    - reproductive toxicity
    - genotoxicity
    - organ toxicity at low doses
    - structure and toxicity profile that mimics existing drugs determined hazardous by the above criteria.

    a. View Lexicomp information
        i. Search for hazardous handling information (note: Lexicomp may refer to 2016 NIOSH list) related to the toxicities above; review any precautions listed.
    b. View the product monograph.
        i. Does the product monograph list any of the toxicities mentioned above at doses lower than the human therapeutic dose?

    If NO, do not add to the AHS Hazardous Medication List. If YES proceed to step 4.

4. Does the medication ONLY meet NIOSH criteria as a developmental and/or reproductive hazard?

    If YES, add to the AHS REPRODUCTIVE Hazard list; If NO (i.e., has genotoxicity, organ toxicity etc.) then add to the AHS POTENTIAL Hazard medication list.

Appendix C: NIOSH Classification of Hazardous Medications

NIOSH List of Hazardous Drugs in Healthcare Settings, 2020 (currently in draft)
Group 1: Drugs that meet the NIOSH definition of a hazardous drug and contain MSHI in the package insert; and/or are classified by the NTP as "known to be a human carcinogen," or classified by IARC as "carcinogenic" or "probably carcinogenic." In the 2016 List this table identified antineoplastic drugs, however, in this update not all the drugs on Table 1 are antineoplastic drugs. Note that many of these medications may also pose a reproductive risk for susceptible populations. (NIOSH Table 1)
Group 2: Drugs that meet one or more of the NIOSH definitions of a hazardous drug but are not drugs which have MSHI or are classified by the NTP as "known to be a human carcinogen," or classified by the IARC as "carcinogenic" or "probably carcinogenic," some of which also have adverse reproductive effects for populations at risk. This table now also includes drugs that only meet the NIOSH criteria as a developmental (including teratogenicity) and/or reproductive hazard. In the 2016 update of the List this table did not include drugs that only posed a developmental and/or reproductive hazard. (NIOSH Table 2)
In the 2016 List, Table 3 provided a list of drugs that met the NIOSH criteria of a reproductive hazard (damaging to a male or female person's ability to conceive or carry to term an offspring) or developmental hazard (able to cause disruption in the development of unborn children including teratogenic outcomes). In this 2020 List, those drugs that only meet NIOSH's criteria as a developmental and/or reproductive hazard are identified in the supplemental information column with a blue notification; a separate Table is no longer provided.

Developed by: AHS – Provincial Hazardous Medication Committee (PHMC); Hazardous Medication Evaluation Panel; PHMC Hazardous Medication List Working Group; Pharmacy Services Medication Quality and Safety Team (MQST); Health Professions, Strategy and Practice (HPSP); Pharmacy Services Technical Practice Leads, Human Factors, Workplace Health and Safety (WHS), and COV Medication Management & Safety Team.

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Please direct questions related to safe handling of hazardous medications to the WHS Services Team in your Zone or send your questions to hazardousmedication@albertahealthservices.ca

Document History

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[i] Product information and monographs at Drug Product Database, Lexicomp, DrugBank, and U.S. National Library of Medicine (Dailymed)

[ii] Government of South Australia, Cytotoxic Drugs and Related Waste [Internet]Department for Health and Ageing, Government of South Australia; June 2015 [cited 2021 October 22]. Available from https://www.sahealth.sa.gov.au/wps/wcm/connect/f8aa68004b3f6cf6a340afe79043faf0/Safe+Handling+Cytotoxic+Guidelines.pdf?MOD=AJPERES&%3bCACHEID=ROOTWORKSPACE-f8aa68004b3f6cf6a340afe79043faf0-nwLgTKw