

## Medications – Cytotoxic & Hazardous - Administration

### Overview

Document Type	Policy
Function	Clinical Service Delivery
Directorates	Multiple directorates
Department(s) affected	Any departments where cytotoxic medications are administered
Applicable for which Patients, Clients or Residents?	Patients having cytotoxic medications
Applicable for which Staff?	ADHB clinicians in departments where cytotoxic medications are administered
Keywords (not part of title)	
Author – role only	Nurse Educators in Haematology and Oncology
Owner (see <a href="#">ownership structure</a> )	CD Medical Oncology on behalf of the Chief Medical Officer
Edited by	Clinical Policy Advisor
Date first published	November 1997
Date last published	May 2014
Review frequency	3 years
Unique Identifier	CP01/BRD/004

*Continued on next page*

# Medications – Cytotoxic & Hazardous - Administration

## Overview, Continued

### Content

This guideline details the accepted practices relating to the administration of cytotoxic therapy and hazardous medicines by Auckland District Health Board (ADHB) staff members.

Topic	See Page
Overview .....	1
Introduction .....	3
Associated Documents & Terms.....	4
Handling Precautions .....	5
Hazardous Medicines .....	7
Administration of Cytotoxic Therapy in Adult Non-Cancer Areas	8
Competence Assessment for Cytotoxic Therapy Administration	11
Cytotoxic Competence Assessment .....	12
Administration and Disposal of Cytotoxic Therapy and Hazardous Medicines .....	16
Splash Precautions .....	17
• Splash Precautions .....	17
IV Administration .....	20
• Check Prior to Administration (cytotoxics only) .....	20
• Administration (cytotoxic therapy & hazardous medicines)	22
• Documentation Required (cytotoxic therapy only).....	23
• Disposal of Equipment (cytotoxic therapy & hazardous medicines) .....	25
Oral Administration .....	26
Administration via Nasogastric Tube.....	27
Cytotoxic and Hazardous Waste Management .....	28
Management of Leaking Intravenous Fluid Bag Containing a Cytotoxic Substance.....	31
Storage Areas for Cytotoxic Therapy .....	32
• Storage (cytotoxics only) .....	32
Transport of Cytotoxics.....	33
Corrections and amendments .....	34

---

# Medications – Cytotoxic & Hazardous - Administration

---

## Introduction

---

### Purpose

The purpose of this guideline is to ensure safe and consistent practice in the administration of cytotoxic therapy and hazardous medicines. Exposure to these may cause skin rashes, infertility, miscarriage, birth defects, and leukaemia and other possible cancers.

Health care workers who work with or near these medicines may be exposed via contamination of the air, or on work surfaces, clothing, medical equipment or patient waste material (urine, faeces, vomit etc.).

This guideline describes the standard precautions that are required when administering both cytotoxic therapy and hazardous medicines and details the additional processes required in relation to cytotoxic therapy.

---

### Scope

Applies to all registered nurses and midwives in all clinical settings across the board.

This guideline also applies to:

- ADHB nursing bureau staff members
  - Agency nursing personnel and students who practice under supervision in the administration of cytotoxic therapy and hazardous medicines in our clinical settings
  - Technicians who have completed the relevant training and competence assessment to administer specific medicines and intravenous infusions
  - Research staff members who have completed the relevant training and competence assessment to administer medicines related to clinical trials only
-

## Medications – Cytotoxic & Hazardous - Administration

### Associated Documents & Terms

#### Associated Documents

The table below indicates other documents and sources associated with this guideline.

Type	Document Titles
ADHB Policies and Guidelines Library	<ul style="list-style-type: none"> <li>• <a href="#">Hand Hygiene</a> – Infection Control</li> <li>• <a href="#">Informed Consent</a></li> <li>• <a href="#">Medications - Intrathecal Chemotherapy</a></li> <li>• <a href="#">Medications - Administration</a></li> <li>• <a href="#">Medications - Cytotoxic &amp; Hazardous - Extravasation</a></li> <li>• <a href="#">Medications - Cytotoxic &amp; Hazardous - Spillage</a></li> <li>• <a href="#">Standard Precautions - Infection Control</a></li> <li>• <a href="#">Waste Management</a> – Infection Control</li> </ul>
References	<ul style="list-style-type: none"> <li>• ACC (2005). <a href="#">Chemical hazards</a>. (17-23)</li> <li>• <a href="#">Guidelines for the Safe Handling of Cytotoxic Drugs and Related Wastes</a>. (1997). Occupational Safety &amp; Health Service, Department of Labour, Wellington, NZ</li> <li>• Havering Primary Care Trust (2005). Clinical guidelines for the administration and disposal of cytotoxic medication in the community for adults</li> <li>• ISSOP (2007). <a href="#">Standards of Practice Safe Handling of Cytotoxics</a>. Journal of Oncology Pharmacy Practice Volume 13</li> <li>• <a href="#">Journal of Oncology Pharmacology Practice</a> (2007). Volume 13 Supplement, 1-81</li> <li>• Langford, S., Fradgely, S., Evans, M. &amp; Blanks, C. (2008). <a href="#">Assessing the risk of handling monoclonal antibodies</a>. Hospital Pharmacy, 15, 60-64</li> <li>• New Zealand Hospital Pharmacist's Association. (1991). <a href="#">Oncology Pharmacy Practice Manual – Cytotoxic Drugs. Vol. 1</a></li> <li>• ADHB Paediatric Haematology and Oncology Clinical Procedures</li> <li>• ADHB Cytotoxic Register - <a href="http://team.adhb.govt.nz/haemonc/default.aspx">http://team.adhb.govt.nz/haemonc/default.aspx</a></li> </ul>

## Medications – Cytotoxic & Hazardous - Administration

### Handling Precautions

#### Handling Precautions

Precautions must be taken during the preparation, administration, and disposal of cytotoxic therapy and hazardous medicines. The list below details the medicines that require special precautions. It is important to note that the list is not exhaustive and is subject to change. Medicines that require special precautions and are dispensed by Auckland City Hospital (ACH) pharmacy should have either a purple (cytotoxic) or orange (hazardous) label.

Cytotoxic Therapy	Cytotoxic Therapy	Hazardous
actinomycin-D		acitretin
amsacrine	mitomycin	adalimumab
		alemtuzumab
bortezomib	mitotane	Atgam (equine antithymocyte globulin)
bendamustine	nelarabine	ATRA- tretinoin
bleomycin	oxaliplatin	azathioprine
busulfan	paclitaxel	basiliximab
capecitabine	pemetrexed	bevacizumab
		bosutinib
		brentuximab
carboplatin	procarbazine	carfilzomib
	streptozocin	cetuximab
carmustine	temozolomide	certolizumab
chlorambucil	teniposide	cidofovir
		crizotinib
		cyclosporin
cisplatin	thioguanine	dasatinib
		eculizumab
cladribine	thiotepa	erlotinib
clofarabine		everolimus
cyclophosphamide	topotecan	foscarnet
cytarabine	vinblastine	ganciclovir
		ganetespib
dacarbazine	vincristine	gefitinib
	vindesine	imatinib
daunorubicin	vinorelbine	ipilimumab
dexrazoxane		isotretinoin
dinaciclib		infliximab
docetaxel		lapatinib
doxorubicin		lenalidomide
epirubicin		masitinib

*Continued on next page*

---

## Medications – Cytotoxic & Hazardous - Administration

---

### Handling Precautions, Continued

---

Cytotoxic Therapy	Cytotoxic Therapy	Hazardous
etoposide		mycophenolate
fludarabine		natalizumab
fluorouracil		neratinib
		nilotinib
gemcitabine		ofatumumab
gemtuzumab		pazopanib
hydroxyurea		pentamidine
idarubicin		Rabbit ATG (antithymocyte globulin)
ifosfamide		ribavirin
		rituximab
irinotecan		sirolimus
lomustine		sunitinib
melphalan		sorafenib
		tacrolimus
mercaptopurine		thalidomide
methotrexate		trastuzumab
mitozantrone		valganciclovir

This is not an exhaustive list. If in doubt, check with the pharmacist

---

---

## Medications – Cytotoxic & Hazardous - Administration

---

### Hazardous Medicines

---

#### **Hazardous Medicines**

Until further information is available regarding handling risks, hazardous medicines are to be handled by nursing staff members with the same precautions as cytotoxic medications. Within this guideline there are sections that only apply to cytotoxic therapy – these can be identified by the title of each section.

Nurses do not need to be on the limited or full cytotoxic register to enable them to administer a hazardous medicine.

---

---

## Medications – Cytotoxic & Hazardous - Administration

---

### Administration of Cytotoxic Therapy in Adult Non-Cancer Areas

---

#### Administration of cytotoxic therapy in non-cancer areas

Only nursing staff members on the limited or full cytotoxic register may administer cytotoxic therapy. Cytotoxic therapy is often prescribed for indications other than cancer e.g. cyclophosphamide for nephrotic syndrome or vasculitis, methotrexate for rheumatoid arthritis, and therefore needs to be administered in non-cancer areas where there is unlikely to be cytotoxic trained nursing staff members. In these situations the flowchart on the following page must be followed.

In non-cancer areas cytotoxic therapy should only be administered during the day (0800-1630) when medical cover is available.

In a medical emergency when cytotoxic therapy must be administered outside the hours of 0800-1630 the patient will usually need to be transferred to ward 62 or 64 to facilitate administration of the cytotoxic therapy. Arrangement must be made by the senior treating clinician (consultant) with the appropriate consultant of either the Oncology or Haematology department in liaison with the nurse coordinator of either ward 62 or 64 to arrange for patient to be transferred and treated on either ward.

The bed manager should be notified if patients need to be transferred.

The clinical nurse advisor should be notified if nursing support is required with clinical workload during patient transfers and/or the administration period.

See flowchart on following page.

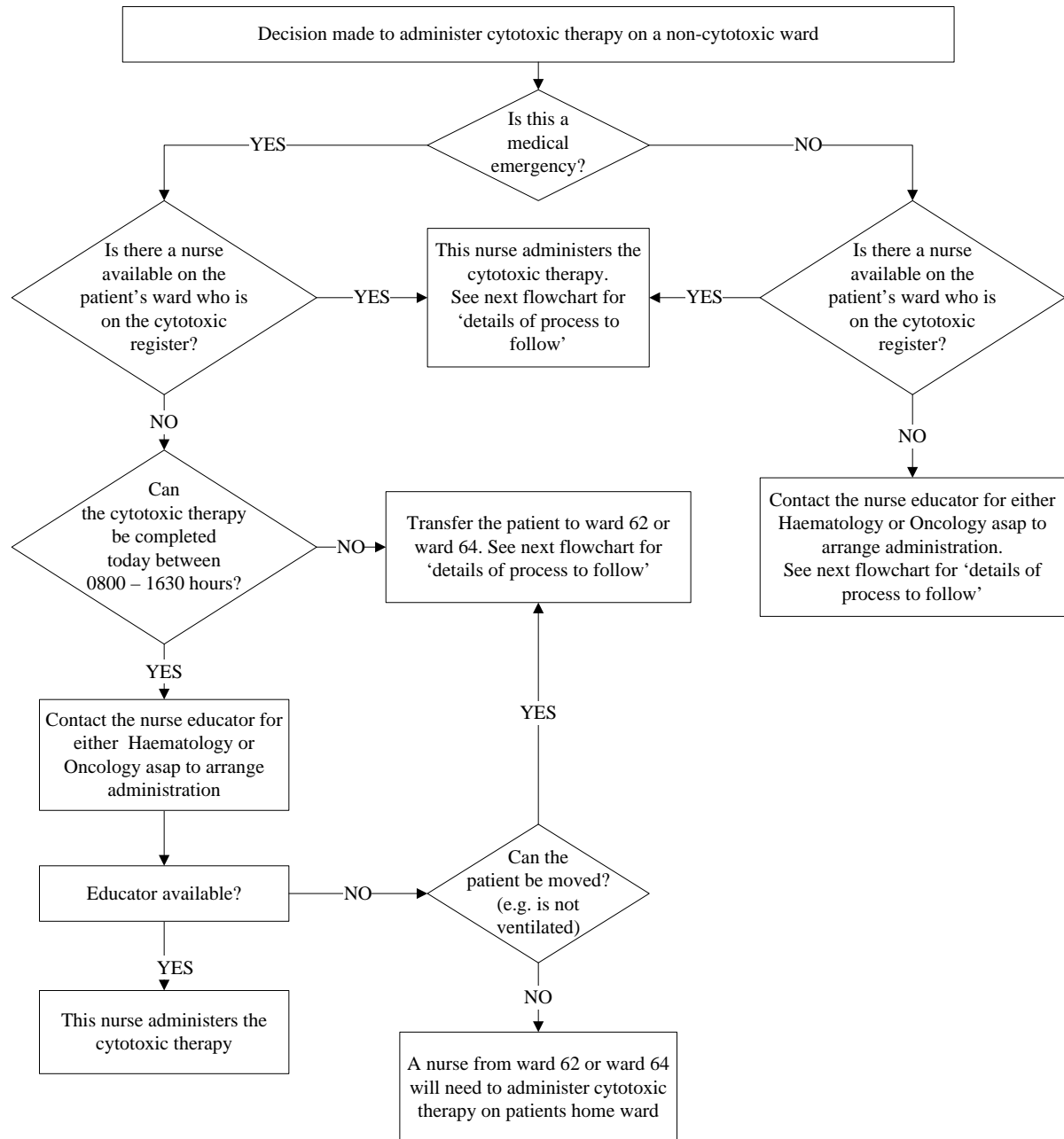
---

*Continued on next page*



## Medications – Cytotoxic & Hazardous - Administration

### Administration of Cytotoxic Therapy in Adult Non-Cancer Areas, Continued

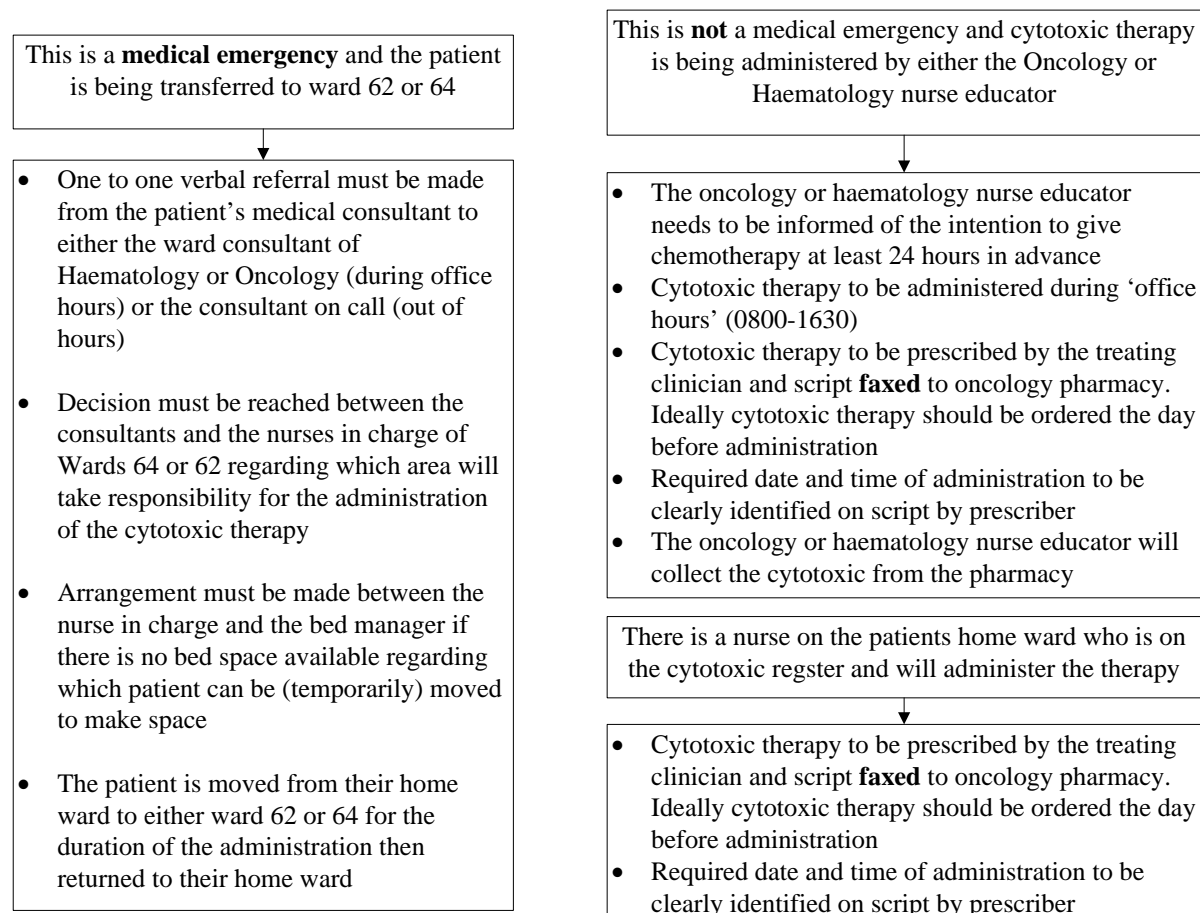


*Continued on next page*

## Medications – Cytotoxic & Hazardous - Administration

### Administration of Cytotoxic Therapy in Adult Non-Cancer Areas, Continued

#### Details of process to follow



**In all cases the following must occur:**

- Contact oncology pharmacy to ensure they received the faxed prescription
- Nursing staff members should follow standard procedures for checking appropriateness of therapy prior to administration

**In the emergency setting when there is no cytotoxic trained nurse on the home ward and the patient cannot be moved e.g. if ventilated, a nurse from ward 62 or ward 64 will need to administer the cytotoxic therapy on the patients home ward**

- The nurses in charge of ward 62 and ward 64 to liaise with each other re: which ward is best placed to release a nurse
- Duty manager is informed that staff movement is necessary and request made for clinical support over this period if required
- CNA support on ward 62 or ward 64 may be required to enable release of the nurse

---

## Medications – Cytotoxic & Hazardous - Administration

---

### Competence Assessment for Cytotoxic Therapy Administration

---

#### Competence Assessment for Cytotoxic Therapy Administration

All nursing staff members across Adult and Paediatric services who are involved in the administration of cytotoxic therapy must have:

- Fulfilled theoretical and competence assessment and be entered onto one of the cytotoxic registers
- Paediatric oncology nurses should have further training relating to adolescents and children provided by the paediatric haematology/oncology nurse educator

Two registers exist that record the names of nursing staff members able to administer cytotoxic therapy – Full Cytotoxic Register and Limited Cytotoxic Register. The registers are maintained by the clinical nurse educator for medical oncology and are located on the intranet - <http://team.adhb.govt.nz/haemonc/default.aspx>. A third register – Intrathecal Chemotherapy Register – details all staff members who have been appropriately trained in the handling and administration of intrathecal chemotherapy.

#### Full register

Staff members on the full register are deemed competent to administer any cytotoxic medicine via any route (EXCEPT intrathecal).

#### Limited register

Staff members on the limited register may only administer named cytotoxic medicine via specified routes. Nurses working in non-cancer areas where chemotherapy may need to be administered must have appropriate training to the level of need within their service.

Arrangements for training may be made with the nurse educators of Haematology or Oncology.

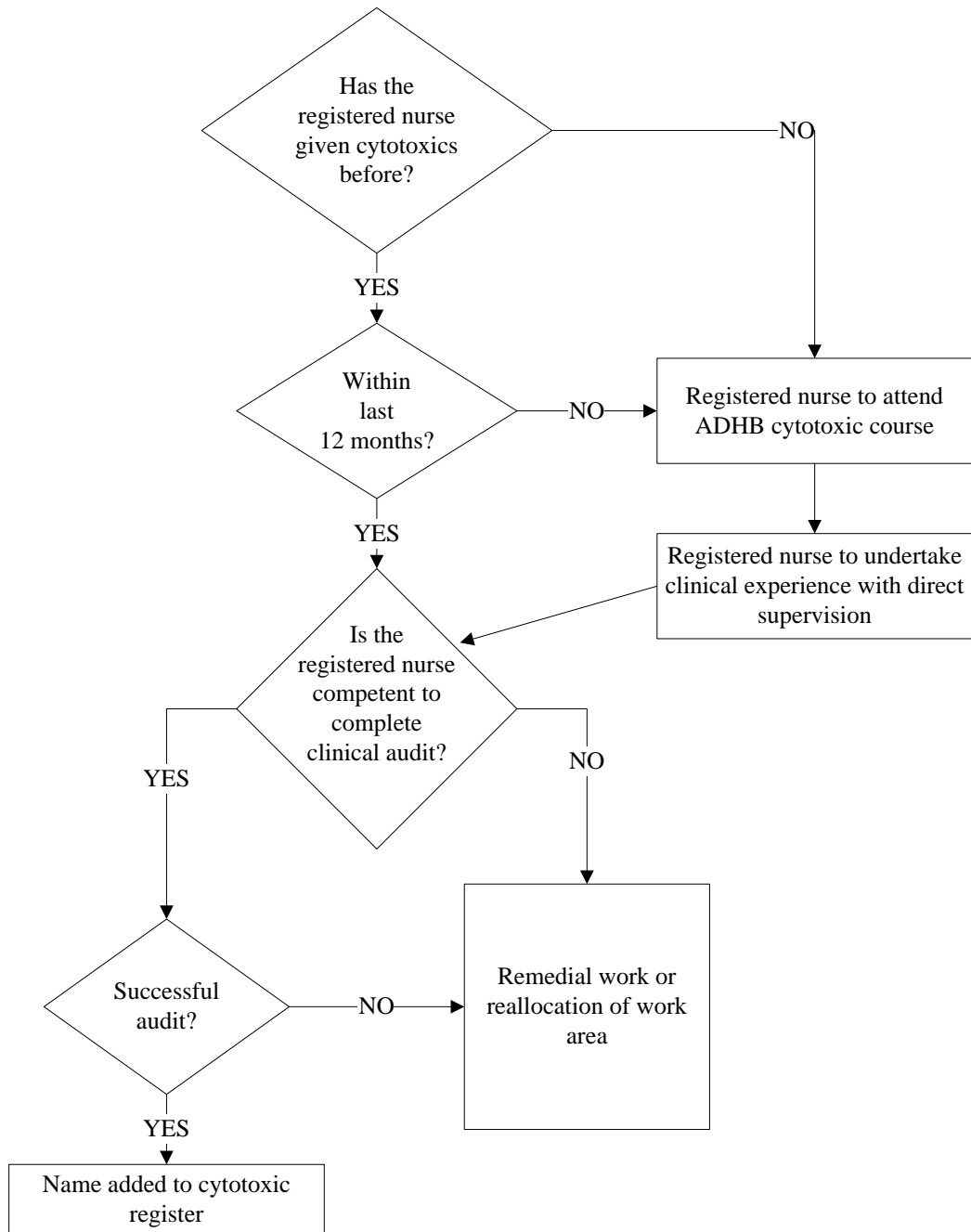
---

# Medications – Cytotoxic & Hazardous - Administration

## Cytotoxic Competence Assessment

**Flowchart**

The flowchart describes the competence assessment process for nurses needing to administer cytotoxic therapy and be added to the cytotoxic register.



*Continued on next page*

---

## Medications – Cytotoxic & Hazardous - Administration

---

### Cytotoxic Competence Assessment, Continued

---

#### Theoretical Programme Objectives

At the end of the theoretical component the nurse should be able to:

- Discuss the use of cytotoxic therapy as a treatment modality for a patient's condition
  - Describe and recognise the side effects and toxicity of frequently used cytotoxics (for inclusion on the Full Register)
  - Discuss and initiate appropriate nursing management of side effects and toxicity
  - State and demonstrate the safety measures required in the checking, administration and disposal of cytotoxics
  - State and initiate the Medications – Cytotoxic - Extravasation guideline in the event of extravasation of cytotoxic therapy
- 

#### Clinical Programme Objectives

Clinical experience is gained in the clinical environment under supervision.

The objectives are:

- To demonstrate under guidance of experienced staff members the safe administration of cytotoxics
  - To demonstrate safe handling of cytotoxic and hazardous waste and spillage
  - Be able to educate patients/whānau about their particular cytotoxic protocol
  - To gain an understanding of the impact that cytotoxic therapy has on the physical and social/emotional lives of patients and their families
  - To successfully complete the cytotoxic administration clinical audit
- 

#### Assessment

Staff members are required to attend the Introduction to Cytotoxic Therapy course, complete the workbook, and undergo a clinical audit. For nurses working outside of cancer and blood services, in-service training and clinical audit is required.

---

*Continued on next page*

## Medications – Cytotoxic & Hazardous - Administration

### Cytotoxic Competence Assessment, Continued

#### Information to Patient

Follow the steps below to provide information to patients receiving cytotoxic therapy and their family. The physician is responsible for obtaining informed consent for the treatment. The nurse provides supplemental information.

Step	Action
1.	<p>Prior to administration of cytotoxics, the nurse ensures that the patient/family/whānau have received information about their proposed course of treatment. This process occurs as per local policy (an interpreter is obtained for those patients/families requiring this service).</p> <p>Information includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• Nature of illness and goal of cytotoxic therapy</li> <li>• Proposed treatment plan</li> <li>• Review of significant risks, associated side effects and toxicity</li> <li>• Self care measures necessary for the patient to take, especially in relation to fever and infection</li> </ul> <p>For patients receiving cytotoxic therapy at home:</p> <ul style="list-style-type: none"> <li>• How to manage a cytotoxic spill at home</li> <li>• How to use a spill kit</li> <li>• Management of contaminated items and method of disposal</li> </ul> <p>The patient is given information regarding how to contact ACH should they become unwell following treatment.</p>
2.	<p>The nurse ascertains whether patient has:</p> <ul style="list-style-type: none"> <li>• Adequate support at home</li> <li>• A requirement for a district nurse or other health professional follow up or input</li> <li>• Anxieties and questions</li> <li>• Referrals to community agencies are made in a timely manner</li> </ul>

*Continued on next page*

---

## Medications – Cytotoxic & Hazardous - Administration

---

### Cytotoxic Competence Assessment, Continued

---

Step	Action
3.	The nurse participates in the informed consent process by: <ul style="list-style-type: none"><li>• Reinforcing, supplementing and clarifying information given by the physician</li><li>• Assisting the patient and their family, if necessary, to articulate concerns and to formulate questions for the physician</li><li>• Discussing with the physician prior to the commencement of treatment any misinformation which the patient or family have concerning:<ul style="list-style-type: none"><li>• Disease</li><li>• Treatment goals</li><li>• Prognosis</li></ul></li></ul>
4.	The nurse ensures that patients involved in research studies have additional information as required by the Ethics Committee.
5.	The nurse offers the patient and caregiver/family appropriate written information, summarising the information covered in the discussion.
6.	Written consent is obtained prior to the commencement of therapy.
7.	Education is reinforced during the patient's subsequent visits for treatment.

---

## Medications – Cytotoxic & Hazardous - Administration

### Administration and Disposal of Cytotoxic Therapy and Hazardous Medicines



International colour for cytotoxics is purple with telophase symbol.



Orange Handle with Care label is used at ADHB for identifying hazardous medicines that require additional precautions.

#### Administration and Disposal of Cytotoxic Therapy and Hazardous Medicines

The table below gives an overview of the precautions required when administering or disposing of cytotoxic therapy and hazardous medicines. There is relatively little evidence regarding the precautions required for hazardous medicines and therefore the same precautions as for cytotoxic therapy are recommended. More detailed information for specific routes of administration follows the table.

Medicine Form or Route of Administration	Required Staff Members Precautions	Disposal/Waste
Parenteral administration	<b>Gown</b> <b>Gloves</b> <b>Splash precautions</b>	<ul style="list-style-type: none"> <li>• Dispose of administration equipment in cytotoxic and hazardous waste containers. Purple plastic bags and sharps bins can be ordered from supply and distribution.</li> <li>• Wash non-disposable items (e.g. mortar &amp; pestle) with hot water and detergent then dry with disposable paper towels (which must be discarded as cytotoxic and hazardous waste).</li> <li>• Fully flush toilets when disposing of excreta.</li> </ul>
Nebulised administration	<b>Gown</b> <b>Gloves</b> <b>Mask</b> <b>Goggles</b> <b>Splash precautions</b>	
Oral preparations that need to be crushed for administration via a feeding tube	<b>Gown</b> <b>Gloves</b> <b>Mask</b> <b>Goggles</b>	
Oral liquids requiring reconstitution	<b>Gown</b> <b>Gloves</b> <b>Mask</b> <b>Goggles</b> <b>Splash precautions</b>	
Oral liquids already prepared	<b>Gown</b> <b>Gloves</b> <b>Splash precautions</b>	
Oral solid dosage form e.g. tablet or capsule and patient can swallow	<b>Gloves</b>	
Topical administration (e.g. eye drops, creams)	<b>Gloves</b> <b>Gown</b>	




**Note: Gloves refers to double gloving (unless using nitrile gloves)**



## Medications – Cytotoxic & Hazardous - Administration

### Splash Precautions

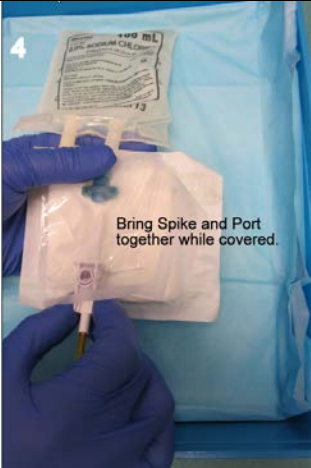

**Splash Precautions** Follow the steps below to prevent inadvertent splashing of cytotoxic therapy and hazardous medicines when handling liquid preparations. The steps below detail the process for IV administration. The Propax dressings can be used to limit exposure for nebulised administration and liquid enteral preparations too.

Step	Action
1.	 <p>Pack of gauze.</p>
2.	 <p>Open gauze pack.</p>
3.	 <p>Put the chemo access port between the plastic and gauze as shown.</p>

*Continued on next page*

## Medications – Cytotoxic & Hazardous - Administration


### Splash Precautions, Continued

Step	Action
4.	 <p>Bring the IV spike and access port of the bag together as shown.</p>
5.	 <p>Using the plastic as a splash guard insert the spike into the access port as shown.</p>

*Continued on next page*

## Medications – Cytotoxic & Hazardous - Administration

### Splash Precautions, Continued

Step	Action
6.	 <p style="font-size: small;">Administer Bolus with Syringe and sideport covered by plastic.</p> <p>Use the same system of splash protection when accessing IV ports with a syringe. Keep the connection covered in this way for the entire administration of the cytotoxic.</p>

---

## Medications – Cytotoxic & Hazardous - Administration

---

### IV Administration

---

#### Check Prior to Administration (cytotoxics only)

Follow the steps below to check the patient prior to IV administration of cytotoxic therapy.

Step	Action
1.	Check that the patient has given informed consent prior to the administration of cytotoxic therapy as per local policy.
2.	Ensure the patient has appropriate IV access for administration of cytotoxic therapy.
3.	At the beginning of each new prescription (cycle) two registered nurses, one of whom is on the full register, must check the following:  i. Check drug and dose against the prescription <ul style="list-style-type: none"><li>• Methods of drug dosage calculation include but are not limited to:<ul style="list-style-type: none"><li>• Body Surface Area (BSA) – dosage per m<sup>2</sup></li><li>• Body weight – dosage per kg</li><li>• Area under the curve – dosage relates to creatinine clearance</li></ul></li><li>• Document and sign that the calculation and drug dose has been checked</li></ul> ii. Documentation by a medical staff member is complete and correct: <ul style="list-style-type: none"><li>• All drug orders are signed and dated</li><li>• Doses must be within safe limits and ceiling doses must not be exceeded (except when specifically requested by a consultant medical staff member)</li><li>• Pre-therapy assessments (e.g. recent blood results) are complete and are within acceptable limits</li></ul>

*Continued on next page*

## Medications – Cytotoxic & Hazardous - Administration

### IV Administration, Continued

Step	Action
3. cont	<p>iii. Final checking of the patient: the patient must state their:</p> <ul style="list-style-type: none"> <li>• Full name, date of birth and address</li> <li>• The patient's name and NHI on the chart corresponds to: <ul style="list-style-type: none"> <li>• The label of the dispensed drug provided by the pharmacy, and</li> <li>• The patient's wrist identification label. (In the outpatient setting the date of birth of the patient is checked instead of the wrist identification label)</li> </ul> </li> </ul> <p>iv. Information on the medication label corresponds to the:</p> <ul style="list-style-type: none"> <li>• Drug dose</li> <li>• Volume in the syringe or IV bag</li> </ul> <p>vi. Drug has been stored correctly prior to use (at room temperature or refrigerated)</p> <ul style="list-style-type: none"> <li>• Expiry date</li> <li>• Light sensitivity</li> </ul>
4.	The nurse giving the cytotoxic therapy must check the patient's tolerance of previous cycle of chemotherapy.
5.	<p>When all checks have been proven correct, both nurses should annotate the cytotoxic prescription with:</p> <ul style="list-style-type: none"> <li>• Date</li> <li>• Dose</li> <li>• Route</li> <li>• Time of administration</li> <li>• Signature and printed name</li> </ul>
6.	<p>If cytotoxics are being administered via a pump both nurses must check pump settings:</p> <ul style="list-style-type: none"> <li>• Prior to initiation of therapy</li> <li>• At each handover</li> </ul>

*Continued on next page*

## Medications – Cytotoxic & Hazardous - Administration

### IV Administration, Continued

#### Administration (cytotoxic therapy & hazardous medicines)

Ensure standard precautions are used:

- Hand hygiene precautions before and after administration
- Point of use disposal of needles. Use luer lock if transporting syringes
- [Splash precautions](#)

Follow the steps below.

Step	Action
1.	<ul style="list-style-type: none"> <li>• Check for backflow of blood at the cannula site prior to IV infusion</li> <li>• Seek consultation from a level III or above nurse or medical officer if blood backflow is not present prior to the administration of a vesicant medication</li> </ul>
2.	For all IV drug administration: <ul style="list-style-type: none"> <li>• Wear:               <ul style="list-style-type: none"> <li>• Splash resistant long sleeved disposable gown</li> <li>• Gloves (double latex glove or use nitrile gloves)</li> </ul> </li> <li>• Ensure that the patient and the environment are protected from any potential accidental exposure</li> </ul>
3.	Bolus injections must always be given slowly into a line with fast flowing IV fluid running in order to dilute the chemotherapy and minimise the risk of extravasation. If several direct infusion (bolus) medications are to be given, vesicants must be administered first.
4.	In the event of an adverse reaction, or patient discomfort during drug administration: <ul style="list-style-type: none"> <li>• Stop the injection/infusion immediately</li> <li>• Advise the necessary medical staff members</li> <li>• Follow the Medications – Cytotoxic - Extravasation guideline</li> </ul>
5.	Flush the IV line following completion of administration.

*Continued on next page*

---

## Medications – Cytotoxic & Hazardous - Administration

---

### IV Administration, Continued

---

**Documentation  
Required (cytotoxic  
therapy only)**

Following administration of cytotoxic therapy, complete nursing documentation noting:

- The patient's vital signs
- Cannulation site and gauge of cannula
- The condition of the site of intravenous access if appropriate
- The patient's tolerance of the previous chemotherapy cycle
- Any difficulties encountered while administering cytotoxic therapy

---

*Continued on next page*

## Medications – Cytotoxic & Hazardous - Administration

### IV Administration, Continued

#### Administer Therapy

Ensure standard precautions are used:

- Hand washing before and after administration
- Point of use disposal of needles and syringes. Recapping is not advisable

**Note:** For oral and nasogastric, please refer to:

- [Handling & Administration of Oral Cytotoxic Therapy](#)
- [Administration of Cytotoxic Therapy via Nasogastric Tube](#)

Follow the steps below to administer cytotoxic therapy.

Step	Action
1.	<ul style="list-style-type: none"> <li>• Backflow of blood at the cannula site is checked prior to infusion of cytotoxic therapy</li> <li>• Seek consultation from a senior credentialed nurse or medical officer if blood backflow is not present prior to the administration of a vesicant medication</li> </ul>
2.	For all cytotoxic drug administration: <ul style="list-style-type: none"> <li>• Wear:               <ul style="list-style-type: none"> <li>• Splash resistant long sleeved gown</li> <li>• Latex gloves</li> <li>• Eye protection</li> </ul> </li> <li>• Ensure that the patient and the environment are protected from any potential accidental exposure</li> </ul>
3.	Cytotoxic therapy is administered according to specific guidelines for each medication. If several direct infusion (bolus) medications are to be given, vesicants are administered first.
4.	Gentle, slow pressure is applied to the plunger of the syringe with fast flowing IV fluid in order to dilute the chemotherapy and minimise the risk of extravasation.
5.	In the event of an adverse reaction, or patient discomfort during drug administration: <ul style="list-style-type: none"> <li>• The injection/infusion is stopped immediately</li> <li>• The appropriate medical staff members are advised, and</li> <li>• Appropriate corrective action is taken</li> </ul>
6.	Following completion of cytotoxic drug administration, the intravenous line is flushed.

*Continued on next page*



## Medications – Cytotoxic & Hazardous - Administration

### IV Administration, Continued

#### Documentation

Follow the steps below to complete the documentation required following administration of cytotoxic medication.

Step	Action
1.	Complete nursing documentation noting: <ul style="list-style-type: none"><li>• The patient's tolerance of the previous chemotherapy cycle</li><li>• The condition of the site of the current intravenous access if appropriate, and</li><li>• Any difficulties encountered while administering chemotherapy</li></ul>
2.	Complete the Cytotoxic Drug Chart.
3.	Complete the IV Fluid Balance Chart if required.

#### Disposal of Equipment (cytotoxic therapy & hazardous medicines)

Follow the steps below to dispose of equipment used for administration of cytotoxic therapy and hazardous medicines.

Step	Action
1.	Place into a purple hard shell container with the telophase symbol all contaminated: <ul style="list-style-type: none"><li>• Sharps</li><li>• Access devices</li></ul> Sharps must be disposed of at point of use.
2.	Place into purple cytotoxic plastic bag (125 micron thick) all contaminated: <ul style="list-style-type: none"><li>• Non-sharps</li><li>• Giving sets</li><li>• Swabs</li><li>• IV bags</li><li>• syringes</li></ul> (If only a thinner bag is available then these will need to be double bagged to avoid leakage).
3.	Once the designated cytotoxic and hazardous waste bag is full, it is the nurse's responsibility to seal the bag prior to its removal from the clinical area.

---

## Medications – Cytotoxic & Hazardous - Administration

---

### Oral Administration

---

#### Handling & Administration of Oral Cytotoxics & Hazardous Medicines

Ensure standard precautions are used:

- Hand washing before and after administration
- [Splash precautions](#) for liquid preparations

Follow the steps below.

Step	Action
1.	Wear gloves when dispensing or administering these medicines.
2.	Remove any packing material from tablet bottles with caution in order to prevent distribution of particulate matter.
3.	Tablets or capsules should not be crushed or broken. <ul style="list-style-type: none"><li>• If broken tablets are present in bottle, protective clothing should be worn:<ul style="list-style-type: none"><li>• Disposable gown</li><li>• Gloves</li><li>• Mask</li></ul></li></ul>
4.	Dispose of any crushed or broken tablets into cytotoxic rubbish bin.

---

---

## Medications – Cytotoxic & Hazardous - Administration

---

### Administration via Nasogastric Tube

---

**Administration via  
Nasogastric Tube  
(cytotoxic therapy  
& hazardous  
medicines)**

Ensure standard precautions are used:

- Hand washing before and after administration
- [Splash precautions](#)

Follow the steps below.

Step	Action
1.	Check if the pharmacy is able to provide a specific formulation that is suitable for nasogastric administration. For paediatric oncology/haematology refer to local guidelines
2.	<ul style="list-style-type: none"><li>• Wear gloves, gown and face mask when administering medicines via nasogastric tube</li><li>• Check position of nasogastric tube</li><li>• Flush nasogastric tube with 5–10 ml water prior to and after administration of medication</li></ul>
3.	Once removed, dispose of the syringe and nasogastric tube into a cytotoxic and hazardous waste container.

---

---

## Medications – Cytotoxic & Hazardous - Administration

---

### Cytotoxic and Hazardous Waste Management

---

#### Introduction

To ensure the correct disposal of cytotoxic and hazardous waste and to reduce the risk of exposure and harm to ADHB employees and other people.

---

#### Waste Classification

Cytotoxic and hazardous waste is classified as:

**Concentrated:** all items contaminated with concentrated cytotoxic or hazardous agents:

- Vials
- Infusion bags
- Syringes

**Diluted:** all items contaminated with dilute cytotoxic or hazardous agents:

- Giving sets
  - Gloves
  - Infusion bags used for flushing lines
- 

#### Waste Processing

The table below gives information on waste processing.

Stage	Description
<b>Identification of Waste</b>	<ul style="list-style-type: none"><li>• Telophase symbol</li><li>• When feasible the international combination of telophase symbol and purple colour</li></ul>
<b>Permitted Receptacles</b>	<ul style="list-style-type: none"><li>• Non-reusable purple hard shell container with telophase symbol</li><li>• Purple cytotoxic and hazardous waste bag</li></ul>
<b>Disposal</b>	<ul style="list-style-type: none"><li>• Treatment on-site: collected directly from waste holding site by off-site contractor</li><li>• Treatment off-site</li></ul>
<b>Other Details</b>	<ul style="list-style-type: none"><li>• Legal documentation requirement may apply</li><li>• Specific guidelines and training essential</li><li>• Linen contaminated with cytotoxic material should be placed in a cytotoxic and hazardous waste bag for incineration</li></ul>

---

*Continued on next page*

## Medications – Cytotoxic & Hazardous - Administration

### Cytotoxic and Hazardous Waste Management, Continued

#### Specific Requirements

- Cytotoxic and hazardous waste should only be collected and handled by personnel trained in handling such substances
- Containers should be sealed and labeled prior to leaving the work room
- Cytotoxic and hazardous waste mixed with other waste should be treated as cytotoxic and hazardous waste
- Low concentration waste from patients being treated with cytotoxic therapy and hazardous medicines should be flushed into the sewer system

#### Manager's Responsibility

Managers of areas generating cytotoxic and hazardous waste are responsible for providing training in:

- Safe handling
- Storage
- Disposal
- Ensuring procedures are:
  - Followed
  - Documented

#### Handling & Disposal of Waste

Follow the steps below for handling of excretion products from patients receiving cytotoxic therapy and hazardous medicines

Step	Action
1.	Use standard precautions whenever handling patient excreta: <ul style="list-style-type: none"> <li>• Hand hygiene and gown and gloves to be worn</li> </ul>
2.	For patients receiving therapy at ACH: <ul style="list-style-type: none"> <li>• Label all urine jugs as cytotoxic contaminated</li> <li>• Dispose of excreta immediately</li> <li>• Clean urinals and urine jugs immediately</li> <li>• If unable to dispose of clean containers immediately:               <ul style="list-style-type: none"> <li>• Identify the items as 'Cytotoxic Contaminated' and cover</li> </ul> </li> <li>• Soiled linen should be disposed of in purple plastic cytotoxic bag for burning</li> </ul>

*Continued on next page*

## Medications – Cytotoxic & Hazardous - Administration

### Cytotoxic and Hazardous Waste Management, Continued

Step	Action
3.	Advise patients and caregivers in the home to: <ul style="list-style-type: none"> <li>• Take particular care with excreta</li> <li>• Full flush toilet with toilet lid down</li> <li>• Wear thick disposable gloves when cleaning any excretion products</li> <li>• Machine wash contaminated linen and clothing separately</li> </ul>

The table below gives details on disposal of specific waste.

Type	Disposal
<b>Sharps</b>	Non reusable purple hard shell container with purple telophase label.
<b>Non-Sharps</b>	Purple plastic bag 125 micron thick.
<b>Disposable Impermeable Cytotoxic Gowns</b>	At the end of each day place gown in cytotoxic and hazardous waste. Replace soiled gowns promptly.
<b>Contaminated Clothing &amp; Bed Linen</b>	Secure in cytotoxic non-sharps waste bag. Contaminated clothing and bed linen may also be placed in plastic bag, well sealed and be taken home by patients to be washed separately to other items.
<b>Patient Waste</b>	Flush into sewer system: <ul style="list-style-type: none"> <li>• Full flush with lid down recommended</li> </ul>
<b>Unused Medicines</b>	Tablets <ul style="list-style-type: none"> <li>• Patients to return unused tablets to clinical area for disposal in purple cytotoxic and hazardous waste bins</li> </ul> Liquids <ul style="list-style-type: none"> <li>• Return unused, unexpired and unopened medicines to pharmacy in polystyrene container</li> </ul> Opened or damaged IV bags to be disposed of in the clinical area into purple cytotoxic and hazardous waste. Leaking IV bags should be double bagged.

## Medications – Cytotoxic & Hazardous - Administration

### Management of Leaking Intravenous Fluid Bag Containing a Cytotoxic Substance

**Objective** To minimize risk of spillage of cytotoxic substance and to reduce risk of harm to patients and personnel.

**Procedure** Follow the steps below to deal with a leaking IV fluid bag that contains cytotoxic therapy.

Step	Action
1.	<ul style="list-style-type: none"> <li>• Put on:                             <ul style="list-style-type: none"> <li>• Mask</li> <li>• Latex gloves</li> <li>• Splash resistant long sleeved gown</li> <li>• Protective eye goggles</li> </ul> </li> <li>• Ensure the IV bag is below eye level</li> <li>• Use plastic backed incontinence sheet to provide impervious barrier while working with spiked bag</li> </ul>
2.	Contain the leaking bag in the incontinence sheet and dispose of immediately into the cytotoxic and hazardous waste container. Double bag and seal. Remove to sluice room for waste collection.
3.	Contact oncology pharmacy (xtn 6235) immediately, and indicate approximately how much fluid has been wasted as a new bag may need to be prepared.
4.	After hours: phone on-call pharmacist through the duty manager if replacement bag required.

---

## Medications – Cytotoxic & Hazardous - Administration

---

### Storage Areas for Cytotoxic Therapy

---

Storage (cytotoxics  
only)

Dedicated storage areas are required for cytotoxics. These areas must be clearly defined and labelled as containing cytotoxics exclusively. Cytotoxic storage containers should be easily recognisable with warning labels to alert staff members to the fact that the contents are cytotoxic.

Cytotoxic spill kits should be available near the storage area.

---



## Medications – Cytotoxic & Hazardous - Administration

### Transport of Cytotoxics

**Procedure  
(cytotoxics only)**

All staff members responsible for the transportation of cytotoxics must follow the steps below.

Step	Action
1.	Cytotoxics must leave oncology pharmacy in a sealed plastic bag and contained in polystyrene box clearly labelled “Caution Cytotoxic Material. Handle with Care”.
2.	Transport staff members should collect polystyrene box from appointed location outside oncology pharmacy office in building 8.  When the destination location is within the same premises and on the same floor of oncology pharmacy office in building 8, cytotoxic material may be transported in a plastic bag by a pharmacy staff member.
3.	Staff members delivering or collecting cytotoxic material should use service lifts only.
4.	In the event of a spillage of cytotoxic material occurring during transport: <ul style="list-style-type: none"><li>• Minimise spread of cytotoxic material by use of plastic backed incontinent sheet</li><li>• Ring oncology pharmacy immediately on Ext 6235</li></ul>
5.	Transport patients with a cytotoxic infusion in progress must be escorted by a registered nurse and orderly who must: <ul style="list-style-type: none"><li>• Receive verbal handover from ward/clinic staff members concerning:<ul style="list-style-type: none"><li>• Type of cytotoxic therapy</li><li>• Rate of infusion</li></ul></li><li>• Have received instruction in the management of a spillage of cytotoxic material</li><li>• Carry a cytotoxic spill kit while transporting patient</li></ul>

---

## Medications – Cytotoxic & Hazardous - Administration

---

### Corrections and amendments

---

#### Corrections and amendments

The next scheduled review of this document is as per the document classification table (page 1). However, if the reader notices any errors or believes that the document should be reviewed *before* the scheduled date, they should contact the owner or the [Clinical Policy Advisor](#) without delay.

---