The purpose of this document is to provide information on the safe administration of antineoplastic drugs via the intravenous, subcutaneous, intramuscular and oral route. Only health care professionals who have attained competency as per institutional guidelines should perform the included procedures. This document should be read in conjunction with:

- Clinical Oncological Society of Australia (COSA) 2008 Guidelines for the Safe Prescribing, Dispensing and Administration of Cancer Chemotherapy
- Cancer Nurses Society of Australia (CNSA) 2010 Position Statement on the Minimum Education Requirements for Nurses involved in the Administration of Anti-Cancer Drugs in the Oncology and Non-Oncology Setting
- eviQ Resource Document - Safe Handling and Waste Management of Hazardous Drugs

Prescribing, dispensing and administration errors relating to antineoplastic drugs that result in patient harm are well documented in the literature. The application of, and adherence to appropriate policies and procedures can reduce the risk of medication errors and adverse patient outcomes from occurring.

**Patient Education**

Patients and their carers should receive appropriately designed and delivered education, including both verbal and written information on:

- the treatment process
  - treatment protocol
  - blood tests and appointments
- side effects and management
  - self care
  - situations that require urgent treatment
- safe handling precautions

In planning education it is important to assess the patient’s individual needs including communication and understanding.

Link to the Antineoplastic Drug Patient Education Checklist

**Patient Consent**

All patients should be consented for treatment. The role of informed consent is to ensure that patients understand the purpose, benefits, risks, and all treatment options before deciding to accept or refuse treatment. Adequately informing patients and obtaining consent in regard to treatment is a specific legal requirement and an accepted part of good medical practice.

Link to the NSW Health 2005 Consent to Medical Treatment - Patient Information PD2005_406

**Patient Assessment**

All patients should have a general assessment at baseline and throughout their treatment according to treatment protocol requirements including:

- laboratory results, if blood parameters are abnormal notify medical officer
- baseline observations specific to the treatment protocol
- symptom and side effect
- allergy and drug reaction history
- performance status weight, height, body surface area (BSA) and ECOG status
- psychosocial screening

Link to Assessment Tool - Antineoplastic Drug General Assessment

Link to Eastern Cooperative Oncology Group (ECOG) Status
Safe Handling Precautions

Appropriate personal protective equipment (PPE) should be worn for administration of all antineoplastic therapy.

Resource Document - Safe Handling and Waste Management of Hazardous Drugs

Time Out Procedure

All drugs MUST be checked at the point of administration by two appropriately trained and skilled registered nurses. Where a second nurse is not available an appropriately trained pharmacist or a medical officer can perform this function.

'Time Out' includes verification of the:

- right patient
- right drug
- right dose
- right route
- right time

The medication order for antineoplastic drugs should present the treatment information in a clear, consistent and unambiguous manner and include all supportive therapies associated with the treatment protocol.

The performance of these checks must be verified by signing and dating the medication chart and or the 'Time Out' procedure checklist by both health professionals.

Link to Antineoplastic Drug Administration Timeout Checklist


Oral Antineoplastic Drug Administration

- do not crush or break oral tablets or open capsules
- if a patient is unable to swallow, or if medication is to be administered by a percutaneous endoscopic gastrostomy (PEG) tube or a nasogastric tube, the pharmacist must be contacted for advice on alternative dose formulations
- capsules and coated tablets should be administered using chemoprotectant gloves and the 'non touch technique'
- full personal protective equipment (PPE) should be worn when administering uncoated tablets
  - link to Table of Oral Antineoplastic Drugs
- if the patient vomits within a few hours of taking the drug, do not repeat the dose
  - inform the medical officer for further guidance
- if the patient forgets to take a dose it should be taken as soon as possible if it is within 12 hours of the missed dose. If it is more than 12 hours since the missed dose, skip the missed dose and continue usual dosing
- all tablets and capsules should be stored appropriately as directed by pharmacy
- all unused tablets and capsules should be returned to pharmacy

Link to Clinical Procedure - Oral Antineoplastic Drug Administration

Intramuscular and Subcutaneous Antineoplastic Drug Administration

- all drugs should be stored appropriately prior to administration as directed by pharmacy
- all syringes should be checked prior to use for any leakage or contamination
- DO NOT expel air from syringe
- select an appropriate site for administration
  - if frequent injections are given, rotate the injection site
- appropriate personal protective equipment (PPE) should be worn by personnel administering antineoplastic drugs
Resource Document - Safe Administration of Antineoplastic Drugs

- patients should be monitored for signs and symptoms of a hypersensitivity reaction
- unused drugs should be returned to the pharmacy

Link to Clinical Procedure - Intramuscular and Subcutaneous Antineoplastic Drug Administration

Intravenous Antineoplastic Drug Administration

- all syringes and infusion bags should be checked prior to use for any leakage, cloudiness or signs of precipitation or contamination. Some preparation may require gentle agitation to mix prior to administration to ensure an even dispersion of drug in the diluent as medication can settle on storage.
- check protocols for specific requirements e.g. assessments, monitoring, pre-medications, anti-emetics or fluids prior to administering antineoplastic drugs
- all drugs should be stored appropriately prior to administration as directed by pharmacy
- unused drugs should be returned to the pharmacy
- appropriate personal protective equipment (PPE) should be worn by personnel administering antineoplastic drugs
- closed system intravenous administration sets with luer lock fittings should be used for administration of antineoplastic therapy

Intravenous Cannula (IVC)

- it is recommended to use a newly sited cannula wherever possible
  - vesicant drugs should be administered through a newly sited cannula where possible*
  - for non vesicant drugs, the cannula should not have been in situ for more than 48 hours
- choose an appropriate IVC type and size for the type of treatment
  - do not use a steel cannula
- if possible use a large vein in the middle of the forearm
- avoid cannulating the back of hand, joints and the antecubital fossa
- do not use the arm on the side of an axillary lymph node dissection
- avoid cannulating veins that have been recently used as there is an increased risk of leakage of the drug from the old site; use a different vein on the opposite limb. If this is not possible then a site in the same vein may be selected but it should be proximal to the previous puncture
- ensure the IVC is stabilised and secured with a transparent dressing to allow the site to be visualised
- ensure patency of the IVC:
  - check for blood return when inserting the cannula
  - check that no resistance is felt when injecting fluid into the cannula
  - observe that the intravenous infusion flows freely once connected
- if the IVC is not patent or resistance is felt, a new IVC should be inserted

Central Venous Access Device (CVAD)

- stabilise and secure the CVAD with a transparent dressing to allow the site to be visualised
- select an appropriate needle size for implanted venous ports (IVP)
- confirm the patency of the CVAD by withdrawing blood and then flushing with 5 to 10 mL sodium chloride 0.9% or other compatible fluid
- do not use if resistance is felt to the flow of fluid - refer to a senior nurse and medical officer

During Intravenous Administration of Antineoplastic Drugs:

- monitor patient for signs and symptoms of hypersensitivity reactions
- the order of drug administration should be as follows (unless otherwise indicated by the specific treatment protocol):
  - give vesicant drugs first
  - followed by irritants with vesicant like properties
  - then irritants
  - and lastly neutrals
If there is more than one vesicant drug, the drug with the most harmful properties should be administered first e.g. anthracyclines followed by vinca alkaloids.

During the administration of a vesicant drug:
- Staff should remain at the patient’s side during the entire administration.
- Vesicant drugs should be diluted during administration by injection into a side port of a fast running drip or via a minibag.
- **Do not** inject against resistance.
- **Do not** use a pump to administer.
- Check line patency and blood return regularly throughout the drug administration.
- Monitor the site for signs of extravasation or leakage.
- If extravasation is suspected, **stop** the infusion.
- Inspect the IVC for blood return, and inspect the insertion site for signs of leakage or oedema.
- Educate the patient to immediately report symptoms such as pain, burning, stinging, swelling, or erythema during and after administration.
- Extravasation must be managed immediately to minimise tissue necrosis.

*Link to Resource Document - Extravasation Management*

**Vincristine Administration**

Vincristine (a vinca alkaloid and vesicant) must only be administered intravenously. It has been associated with errors involving inadvertent administration by the incorrect route which has resulted in permanent disability and death.

*NSW Health Policy Standard PD2012_003 "High Risk Medicines Management"* recommends that a peripheral cannula used to administer vincristine should have been inserted within the last 24 hours.

**Post Administration**

- Ensure administration of post therapy fluids and medications are given as per protocol requirements e.g. folinic acid rescue; antiemetics.
- Monitor and assess patients as per protocol requirements.
- Arrange relevant laboratory tests and provide patient with appropriate forms.
- Ensure an appointment for medical review and the next cycle of treatment is booked.
- Refer to community nurse if required:
  - [Community Nurse Referral Form](#)
- Ensure patient has all discharge medications.
- Provide written instructions or access to information about the treatment administered including expected side effects, precautions to be taken and what to do in event of an adverse effects e.g. uncontrolled nausea and vomiting or severe diarrhoea.
- Provide emergency contact details for medical staff and treatment centre.

**Documentation**

Document in the patient notes:
- Patient and carer education.
- Patient assessment.
- Record of drug administration.
- Any adverse events and the interventions e.g. dose reductions.
- Patient referrals.

**Disclaimer:** This document reflects what is currently regarded as safe practice. While every effort has been made to ensure the accuracy of the contents at the time of publication, the Cancer Institute, NSW does not accept any liability, with respect to loss, damage, injury or expense arising from any such errors or omission in the contents of this work. Any reference throughout the document to specific pharmaceuticals and/or medical products as examples does not imply endorsement of any of these products.
References


15. NSW Health Policy Standard "High Risk Medicines Management" PD2012_003 January 2012 - Link to external article

The currency of this information is guaranteed only up until the date of printing, for any updates please check www.eviq.org.au

- 03 Apr 2012