Guidance for the Safe Use of Cytotoxic Chemotherapy in Grampian, Orkney and Shetland

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Review date: December 2006

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Policy application: Across NHS Grampian

Purpose: To give all relevant staff guidance on the safe use of Cytotoxic Chemotherapy

Responsibilities for implementation:

Organisational: Management Teams and Chief Executives
Clinical group: Clinical Group Co-ordinators
Corporate: Senior Managers
Departmental: Clinical Leads
Area: Line Managers

Policy statement: It is the responsibility of supervisory staff at all levels to ensure that their staff are working to the most up-to-date and relevant policies and procedures. By doing so, the quality of the services offered will be maintained, and the chances of staff making erroneous decisions, which may affect patient, staff or visitor safety and comfort, will be reduced.

Review: This policy will be reviewed annually.

Approved by: ____________________________ Date: ____________________________

Signature: ____________________________

Designation: ____________________________
Guidelines Information

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INTRODUCTION

Cytotoxic medicines are known to be potentially carcinogenic, mutagenic and teratogenic and are hazardous as defined by the Control of Substances Hazardous to Health (COSHH) Regulations. The risks to patients receiving cytotoxic chemotherapy are well documented and are balanced against clinical benefit. The risk to staff through occupational exposure is less clear. However, there is sufficient evidence to indicate that all necessary measures should be adopted to prevent exposure. Cytotoxic chemotherapy must be prescribed, dispensed, supplied and administered in accordance with the Medicines Act 1968.

This document presents guidance for the use of cytotoxic chemotherapy in Grampian, Orkney and Shetland. It provides a framework for safe practice in the prescribing, preparation, administration and handling to minimise risk to patients receiving cytotoxic chemotherapy and protect staff from occupational exposure to these hazardous medicines. In addition, it provides guidance on the extravasation of cytotoxic drugs. The document should be used in conjunction with other relevant clinical guidelines.

It has been developed in response to the Audit of Cancer Chemotherapy Services in Grampian, Orkney and Shetland (2002). The audit identified a number of actions, including the development of joint policies and procedures for the safe handling, administration and disposal of cytotoxic chemotherapy. The document has been revised in response to HDL (2005) 29.

This guidance should be available to all staff involved in receipt, storage, transport or disposal as well as those who prescribe, prepare, dispense or administer chemotherapy. Adherence to the guidance will minimise risk to all staff who handle cytotoxic chemotherapy.

SCOPE OF DOCUMENT

The use of cytotoxic chemotherapy for the treatment of cancer.

The use of cytotoxic medicines for non-cancer indications is outwith the scope of this document, but it is clearly applicable to all areas of practice where cytotoxic medicines are used.

Specific guidance on the handling of intrathecal cytotoxic medicines is to be found in the NHS Grampian guidelines and the national guideline HDL (2004) 30.
1 PRESCRIBING CYTOTOXIC CHEMOTHERAPY

1.1 Prescribing Requirements

1.1.1 The initial decision to prescribe cytotoxic chemotherapy must be made by a consultant or specialist registrar. It is the responsibility of each individual consultant to record the following in the patient’s notes:
- decision to treat
- proposed plan of treatment
- treatment to be given
- duration of chemotherapy cycles
- points of response evaluation

1.1.2 Before each course of cytotoxic chemotherapy the patient should be reassessed as being fit to receive the prescribed treatment by a consultant, specialist registrar or specialist nurse.

1.1.3 Prescribing should be in accordance with written local treatment protocols that are readily available in the ward, clinic and pharmacy department. Protocols are required for all chemotherapy regimens, including new and ad-hoc regimens and oral chemotherapy, and will be entered on the Chemocare® system in their final format.

1.1.4 Chemotherapy protocols should include clear and unambiguous statements on the following:
- definition of the clinical condition being treated
- all chemotherapy medicines to be given
- dosing schedule for each medicine
- route, method and duration over which the chemotherapy is to be administered
- maximum cumulative doses, where applicable
- any pre-medication required
- diluents and appropriate infusion volumes
- hydration schedules, if required
- supportive therapy
- relevant haematology and biochemistry results
- any other tests that need to be performed before chemotherapy starts and during treatment
- special precautions and contraindications to treatment
- potential interactions and medications to be avoided
- recommendations for treatment delays or dose reductions
- expected toxicities
- where relevant, reference should be made to policies for the management of side effects
- advice on when patients should be referred for review by the consultant
- reference source(s)

1.1.5 Cytotoxic chemotherapy regimens must be prescribed on a standardised chemotherapy prescription form that has been designed for this purpose. Each time a new protocol is used, a standardised prescription form is devised giving details of the regimen and the drug administration details. This may be designed by the pharmacist or doctor and must be verified by both the initiating consultant or specialist registrar (who will sign and date the prescription) and by the pharmacy department. Chemocare® forms should be used.
1.1.6 Prescriptions must include:
- the name of the chemotherapy protocol
- all chemotherapy medicines to be given, including protocol doses
- maximum cumulative doses, where applicable
- route, method and duration of administration
- where appropriate, diluents and infusion volumes
- hydration schedules, if required
- pre-medication, if required
- appropriate supportive therapy
- indication of concomitant radiotherapy, where applicable
- cycle number and date of administration
- signature and name of prescriber, and date prescribed

1.1.7 The cytotoxic chemotherapy prescription form must provide sufficient patient and drug details to allow verification of the prescription. The information must include:
- name, date of birth, patient identification number, CHI number
- height, weight and body surface area, where relevant
- diagnosis
- relevant haematology and biochemistry results
- any other relevant tests
- calculated doses to be administered
- indication of any dose modifications made

Cytotoxic chemotherapy will not be released from the pharmacy department until all the relevant data has been received and verified.

1.1.8 For new regimens or ad-hoc cytotoxic chemotherapy, the patient’s consultant or specialist registrar must prescribe cytotoxic chemotherapy and ensure that other members of the multi-professional team are provided with adequate information relating to such regimens. Information provided should include background to decision (if possible, with references), drug preparation, supportive therapy, and how it will be used in the clinical setting so that these can be explained to the patient.

1.2 Oral Cytotoxic Chemotherapy
1.2.1 The initial decision to prescribe oral cytotoxic chemotherapy must be made by a consultant or specialist registrar. It is the responsibility of each individual consultant to record the following in the patient’s notes:
- decision to treat
- proposed plan of treatment
- treatment to be given
- the duration or number of chemotherapy cycles
- points of response evaluation
- follow-up arrangements

1.2.2 All prescriptions for oral cytotoxic chemotherapy must state the start date and duration of each treatment cycle.

1.2.3 At each review, it must be specified how many cycles of chemotherapy will be given before consultant or specialist registrar review.
1.2.4 The oral cytotoxic chemotherapy prescription form must provide sufficient details to allow verification. The information must include:

- patient’s name
- date of birth
- unit number
- height and weight
- surface area
- diagnosis
- haematology/biochemistry results (as required by the protocol).

1.2.5 Oral cytotoxic chemotherapy must not be prescribed by repeat prescription.

1.2.6 Other than in exceptional and clearly defined circumstances, prescribing remains the responsibility of the cancer specialist and, where appropriate, the supplementary prescriber.

2 PHARMACEUTICAL VERIFICATION, PREPARATION AND DISPENSING

2.1 Pharmaceutical Verification

2.1.1 All prescriptions for cytotoxic chemotherapy must be verified by a suitably trained pharmacist, in accordance with agreed chemotherapy protocol.

2.1.2 Recommendations on criteria for dose reductions, or delay or drug alterations relating to haematological and non-haematological toxicity must be readily available to both prescriber and verifier.

2.1.3 When the drugs are dispensed there will be verification procedures built into the dispensing processes in the pharmacy department, which are in accordance with local protocols.

2.2 Chemotherapy Preparation and Dispensing

2.2.1 All cytotoxic chemotherapy is supplied from the pharmacy department at Aberdeen Royal Infirmary.

2.2.2 All cytotoxic chemotherapy is dispensed and labelled for the individual patient.

2.2.3 All cytotoxic chemotherapy requiring aseptic manipulation is prepared in accordance with legislative requirements, national standards and guidelines.

The aseptic service is independently audited, by either:

a. MHRA inspection within the 2 years prior to assessment visit (Licensed facility)
b. Aseptic Services Specialist Interest Group (ASSIG) and the Quality Assurance Specialist Interest Group (QASIG) inspection within 2 years prior to assessment visit (Unlicensed facility)

In either case, the organisation abides by the findings and there is an agreed action plan with priorities and timescales to address deficiencies.

2.2.4 The dispensing of oral cytotoxic chemotherapy complies with relevant legislative standards, national standards and guidelines.
2.2.5 Cytotoxic chemotherapy must always be prepared to the same exacting standard whether within normal working hours or out of hours.

2.2.6 In the event of an emergency where it is considered that the patient requires immediate cytotoxic chemotherapy out of hours, the patient’s consultant must contact the pharmacy department at Aberdeen Royal Infirmary to discuss reconstitution arrangements. A local policy to address constitution out of hours should be developed.

2.2.7 Oral suspensions of cytotoxic medicines, which do not have a UK product licence, are purchased from a licenced specialist manufacturer unless the pharmacy has specialist facilities for compounding such suspensions.

2.3 Storage of Cytotoxic Chemotherapy in Pharmacy
2.3.1 Cytotoxic medicines are received into the pharmacy department according to safe handling procedures.

2.3.2 Cytotoxic medicines are stored securely and safely, and under the appropriate storage conditions within the pharmacy department. Temperature monitoring of storage areas is undertaken on a regular basis.

2.3.3 Separate storage conditions exist for cytotoxic products. These locations are marked as being for cytotoxic medicines only.

2.3.4 Staff receiving cytotoxic medicines into the pharmacy department are trained in the safe handling of these products.

2.4 Transport of Cytotoxic Chemotherapy to Patient Areas
2.4.1 A procedure must be in place to ensure that cytotoxic medicines are transported safely and securely, and under the appropriate storage conditions.

2.4.2 Staff transporting cytotoxic medicines must be trained in the safe handling of these products.

2.4.3 Cytotoxic chemotherapy should be clearly identifiable and lines of communication must be in place so that products can be tracked in the event that they do not arrive.

2.5 Receipt and Storage of Cytotoxic Chemotherapy in Patient Areas
2.5.1 Cytotoxic chemotherapy should be received by a staff member who will be responsible for opening the package and ensuring that it is stored safely and in an appropriate manner until required for use.

2.5.2 Staff accepting delivery of cytotoxic chemotherapy must be trained in its safe, secure and appropriate storage.

2.5.3 Storage at the ward/clinic should be according to current recommendations for drug storage in hospitals. An area should be identified specifically for hazardous drugs and labelled as such. The physical storage requirements set out on the label should be met e.g. refrigeration between 2-8°C.
2.5.4 Special care should be taken when opening packages to ensure that they are not punctured.

2.6 Storage of Cytotoxic Medicines in the Community

2.6.1 Cytotoxic chemotherapy will be labelled in a way to identify the contents as being “cytotoxic” and give instructions on safe storage, and information on what to do in the event of a spill.

2.6.2 Cytotoxic chemotherapy must be stored under conditions advised by the pharmacy department at Aberdeen Royal Infirmary.

2.6.3 Wherever cytotoxic chemotherapy must be stored in a fridge it must be identified that sufficient storage space in a suitable fridge is available before the patient is discharged. (It is important to note that the temperature of a domestic fridge cannot be guaranteed.)

2.6.4 Wherever cytotoxic chemotherapy is stored, gloves, apron and sharps bin marked cytotoxic waste must be available together with instructions on how to manage a spill should this occur.

3 ADMINISTRATION OF CYTOTOXIC CHEMOTHERAPY

3.1 General Administration Issues

3.1.1 Cytotoxic chemotherapy must be administered by professionally qualified practitioners who must be able to demonstrate competence. Staff should demonstrate their competency on an annual basis and keep written records of their training and competency reviews.

3.1.2 Practitioners administering bolus injections of cytotoxic chemotherapy must have completed a recognised post-registration course.

3.1.3 In accordance with the local policy for the administration of medicines, checks must be carried out immediately before drugs are administered to ensure:
- correct patient
- CHI number/patient identification number
- date and time of administration
- patient name on the cytotoxic chemotherapy and prescription form
- drug name, dose, volume bolus/infusion, route of administration and rate is correct in relation to the prescription
- expiry date and time on the item will not pass before administration is complete
- steps to be taken if discrepancies found
- requirement for a second check

3.1.4 The patient’s condition must be assessed prior to chemotherapy being commenced to ensure no significant deterioration has occurred since it was prescribed.

3.1.5 Cytotoxic chemotherapy should only be administered during normal working hours (9am –5pm, Monday – Friday) and in designated areas where support services and expert advice are available to minimise the risk of adverse incidents.
3.1.6 Patients should receive cytotoxic chemotherapy in designated wards or outpatient clinics that are equipped to deal with any emergencies that may arise from treatment.

3.2 Hospital/Clinic Environment

3.2.1 Cytotoxic chemotherapy should only be administered in an environment, which meets the following criteria:

- during normal working hours (9am–5pm, Monday–Friday) when access to specialist staff is more likely to be available
- adequate staffing levels to deal with workload
- uncrowded and uncluttered
- well lit
- minimum disruption and distraction, e.g. not a thoroughfare
- availability of adequate storage space
- availability of suitable work surface area
- a floor that is wipeable (not a carpet) to allow easy management of spillage
- immediate access to telephone, emergency call bell and resuscitation equipment
- access to expert help and equipment to deal with emergency situations including anaphylaxis, extravasation and spillage
- facilities for the safe disposal of cytotoxic waste

3.3 Domestic environment

3.3.1 The following should be available:

- suitable work surface area
- domestic fridge if required (note the temperature cannot be guaranteed)
- facilities for the safe disposal of cytotoxic chemotherapy
- access to relevant drug information, protocols, policies, procedures and guidelines

3.4 Equipment

3.4.1 Electro-mechanical equipment used to assist administration of cytotoxic chemotherapy must have a current maintenance certificate, be monitored for consistent performance and be appropriate for the prescribed purpose.

3.4.2 Any adverse incidents involving equipment must be recorded in accordance with the respective Health Board’s policy on reporting adverse incidents.

3.4.3 Community staff must have access to appropriate equipment for administration of cytotoxic chemotherapy.

3.5 Personnel protective equipment

3.5.1 During administration unnecessary exposure to cytotoxic drugs must be minimised through safe handling techniques and protective clothing. Disposable gloves and a plastic apron must be worn at all times when administering cytotoxic chemotherapy.

3.5.2 Disposable gloves - the following principles and procedures must be adhered to:
- latex procedural gloves e.g. Safeskin PFE-XTRA® should be used
- hands should be washed thoroughly with soap or detergent before and after use
- no material is completely impermeable and since permeability increases with time
- users should minimise contact and change gloves between patients
- gloves must not be worn for longer than one hour
- gloves must be changed immediately if they become contaminated or damaged

3.5.3 A plastic disposable apron will offer some degree of protection to clothes.

3.5.4 Used gloves and aprons must be disposed of as cytotoxic waste.

3.6 Guidelines for the Intravenous Administration of Cytotoxic Chemotherapy

3.6.1 The extravasation policy must be readily available wherever chemotherapy is administered to allow staff to deal with such events promptly and appropriately. Guidelines for the recognition and treatment of extravasation caused by chemotherapy are given in Appendix 1.

3.6.2 There should be a suitably stocked extravasation kit in all areas where chemotherapy is administered. The kit must be regularly checked for completeness and expired stock.

3.6.3 Extravasation incidents must be recorded using the respective Health Board’s policy for recording incidents/occurrences.

3.6.4 The person administering the treatment must ensure that adequate protection is provided to the patient and themselves. The area around the injection site should be protected from accidental spills with absorbent pads and the person administering the treatment should wear the following protective clothing:
  • plastic apron
  • latex procedural gloves e.g. Safeskin PFE-XTRA®
  • eye protection (to British Standard EN166), face protection and eyewash should be available in any area where a COSHH assessment has determined that there is a risk of generating splashes or sprays of aerosols containing cytotoxic drugs

3.6.5 The choice of vascular access device depends on the patient and the quantity of the cytotoxic chemotherapy to be administered. It is recommended that small gauge Teflon® or silicon cannulae with Luer-Lok® attachments should be used whenever possible.

3.6.6 For the slow infusion of high risk drugs, a central line, peripherally inserted central catheter (PICC) or other long line should be used whenever possible.

3.6.7 The cannula site should be chosen carefully, the first choice being the forearm. The dorsum of the hand, the antecubital fossa, the feet or other sites in close proximity to joints, tendons, nerves or major arteries should not be used unless no other access is available. Avoid using limbs with compromised circulation or lymphatic drainage.

3.6.8 If using peripheral cannulation as the route of choice, the person administering the chemotherapy should cannulate the patient so that they know the integrity of the vessel.
3.6.9 To ensure patency of a peripheral IV site, cytotoxic chemotherapy should be given through a recently sited cannula. Cannulation should be performed proximal to any recent venepuncture i.e. blood sampling or failed cannulation attempts.

3.6.10 The venous access device should be inserted without difficulty using an aseptic technique. If there are any difficulties experienced inserting the cannula another site should be selected. The cannula should be fastened and secured, using transparent dressings, in a manner that allows the area to be observed during the administration of cytotoxic chemotherapy.

3.6.11 All bolus IV cytotoxic chemotherapy should be administered via a fast flowing infusion of a fluid compatible with the drug being administered. Advice on compatibilities is available from the pharmacy department. Flush the line with this fluid and verify the patency of the vein immediately prior to the administration of chemotherapy and regularly thereafter. If there are any doubts, stop and investigate. Re-site the cannula if the patency of the venous access is still not satisfactory. Continuous assessment of the IV site is essential.

3.6.12 Stopping the infusion and observing back flow of blood into the cannula may also check line patency.

3.6.13 The patient must be asked to report any sensation of burning, pain or swelling at, or distal to, the venous access site during the administration of cytotoxic chemotherapy.

3.6.14 If more than one cytotoxic drug is administered at the same time the most vesicant should be administered first.

3.6.15 All personnel must be aware of the local procedures to be followed in the event of exposure to accidental spillage or of skin/eye contact with hazardous drugs. These procedures should include immediate treatment, medical follow-up and incident reporting.

3.6.16 If mechanical or electronic infusion pumps are being used for infusions of chemotherapy, these should be set at the lowest possible pressure, as the cannula may continue to operate after extravasation has occurred. This may be a particular problem at low run rates.

3.6.17 Infusion pump alarms should be investigated promptly as it may indicate extravasation is occurring.

3.6.18 When the cannula is removed pressure should be applied with sterile gauze for 3-4 minutes and the injection site inspected for adverse reactions or continued bleeding before a dressing is applied.

3.6.19 All materials must be disposed of as per local policy.

3.6.20 Care is required when administering chemotherapy through central lines to avoid contamination and infection. The safe use of central lines should be set out in local protocols and all staff manipulating these lines should undergo formal training in aseptic techniques required by local protocols.
3.7 **Guidelines for Administration of Oral Cytotoxic Chemotherapy**

3.7.1 Oral cytotoxic chemotherapy must be prescribed on drug chart with start and stop dates clearly indicated.

3.7.2 Disposable gloves must be used when handling oral cytotoxic chemotherapy and associated containers.

3.7.3 Once dispensed by pharmacy department, tablets must not be crushed, nor capsules opened or the medication tampered with in any way.

3.7.4 If the patient is unable to take the drug in the form presented, contact the pharmacy department. The pharmacy department may be able to supply another form or dispense a modified form in a safer environment. Information about the hazards of modifying dosage forms should be given to everyone concerned with the patient’s care.

3.7.5 The ‘no touch’ principle applies to handling oral cytotoxic drugs. Skin contact with oral cytotoxic preparations should be avoided.

3.7.6 Measuring spoons and cups used for the administration of oral cytotoxic drugs must be disposed of after use in an appropriately labelled, puncture proof, designated container for incineration.

3.8 **Guidelines for Administration of Intrathecal Cytotoxic Chemotherapy**

3.8.1 There have been a number of fatalities where intravenous chemotherapy has been given by the intrathecal route. In accordance with national guidelines special precautions must be taken at all stages of prescribing, preparation and administration of drugs intended for the intrathecal route. Specific guidance on the administration of intrathecal cytotoxic chemotherapy can be found in the national guidance HDL (2004) 30 and the NHS Grampian document.

3.9 **Guidelines for Other Routes of Administration**

3.9.1 These include intravesical, intrapleural, intraocular, topical, subcutaneous, intraperitoneal, isolated limb or breast perfusion and inhaled routes. Administration of chemotherapy by any of these routes should be included in clinical management protocols.

3.9.2 Advice on handling cytotoxic chemotherapy for occasional use by these routes may be sought from the pharmacy department. If a route is routinely used, a protocol specific to the administration and handling procedures should be developed. For example, instillation of cytotoxic chemotherapy into the bladder.

3.9.3 The same principles of safe administration should be followed as for the parenteral and oral routes.

4 **DISPOSAL OF CYTOTOXIC CHEMOTHERAPY WASTE**

4.1 **General points**

4.1.1 All staff who handle cytotoxic chemotherapy or waste, or work in areas where they are used must be trained appropriately in the risks and appropriate practices for...
handling and disposal of waste. Their understanding of, and adherence to, local policies and protocols should be monitored.

4.1.2 Disposal of cytotoxic waste must comply with the respective Health Board’s Waste Policy. These policies define cytotoxic waste as special/hazardous waste and formal notification procedures to the Scottish Environmental Protection Agency (SEPA) apply.

4.1.3 An individual must be identified who has overall responsibility for the disposal of cytotoxic waste within the hospital/clinic/community.

4.1.4 Items that may be considered to be contaminated include: bottles, vials, personal protective equipment and other materials used in the preparation and administration of cytotoxic chemotherapy. Any material or equipment that has been used to collect blood or body fluids from patients who have received chemotherapy must also be disposed of as contaminated waste.

4.1.5 A disposable apron and latex procedural gloves e.g. Safeskin PFE-XTRA® should be worn when dealing with any cytotoxic waste products.

4.1.6 A licensed waste disposal company should be employed to remove and dispose of cytotoxic waste.

4.1.7 All staff handling patient waste must have undergone training in safe handling procedures. This must include domestic staff involved in handling patient waste or cleaning the facilities used.

4.2 Used Administration Devices and Contaminated Waste

4.2.1 Suitable containers clearly labelled and reserved solely for cytotoxic waste should be available in all areas where these drugs are handled.

4.2.2 These should be purple coded bins and marked with the nature of the contents. They should be made of plastic, be puncture and leak-proof with tightly fitting lids that can be sealed when the container is full.

4.2.3 Contaminated materials such as bottles, infusion bags, personal protective equipment and other materials used for administering cytotoxic chemotherapy should be placed in the cytotoxic waste container after use. The container must be tagged with the department’s appropriate code tags so its source can be identified if required. These procedures must be in accordance with the respective Health Board’s Waste Policy.

4.2.4 Contaminated needles, giving sets and tubing should be disposed of intact and not cut, to avoid risk of aerosolisation.

4.2.5 Cytotoxic waste containers should be segregated from other clinical and non-clinical waste and not allowed to accumulate. Facilities for the storage and transportation of cytotoxic waste awaiting destruction must not expose personnel to any risk from the waste.

4.2.6 Significant leakage from punctured infusion bags must be treated as a spillage.
4.2.7 Cytotoxic chemotherapy waste (as described above) must not be disposed of into the hospital drainage system, but disposed of in accordance with the respective Health Board’s policy.

4.3 **Disposal of Unused/Part-used Chemotherapy**

4.3.1 Unused doses of cytotoxic chemotherapy must be placed in a leak-proof cytotoxic waste bin and sealed at ward/clinic level. These cytotoxic waste bins must be segregated from other clinical and non-clinical waste to ensure appropriate disposal.

4.3.2 When unused cytotoxic chemotherapy is to be removed from the clinical setting, the guidance for safe transportation must be followed.

4.3.3 If cytotoxic chemotherapy is not administered then the pharmacy department at Aberdeen Royal Infirmary should be informed so that the prescription can be annotated accordingly.

4.4 **Disposal of Cytotoxic Waste in the Community**

4.4.1 Contaminated needles with syringes, bags etc attached must be placed in a 6-litre sharps bin, obtainable from normal supplies point, or via requisition from central stores.

4.4.2 Contaminated needles, giving sets and tubing should be disposed of intact and not cut, to avoid risk of aerosolisation.

4.4.3 All other materials used for the administration of cytotoxic chemotherapy and personal protective clothing should be double wrapped prior to being placed in a 6 or 12 litre sharps bin. Double wrapping is placing waste in two yellow or clear bags, each of which is sealed with a knot.

4.4.4 All sharps bins must be sealed and have a bin label detailing the patient’s name and address. This should be carried out by the Community Nurse and marked “CYTOTOXIC WASTE” using an indelible ink marker.

4.4.5 Cytotoxic waste sharps bins must not be put into bags or put into the normal “orange” stream clinical waste system.

4.4.6 The Community Nurse must take the sharps bins back to base and store safely, securely and separately from any other clinical waste. (Cytotoxic waste is subject to the requirements of the Special Waste Regulations: 1996).

4.4.7 It is the responsibility of the Community Nurse/Community Hospital to contact the NHS Grampian Transport Service on 01224 553654 to arrange uplift of the cytotoxic waste, as part of a pre-notified collection round, regulated by (SEPA). Collection will normally occur within 10 working days (although there may be exceptions if SEPA consent is not granted). The NHS Grampian Transport Department will require details of the name of the community nurse and work base and the collection uplift point. The Transport Department will confirm the planned uplift date.
MINIMISING OCCUPATIONAL EXPOSURE

5.1 General Principles for Handling Cytotoxic Chemotherapy

Cytotoxic medicines are hazardous as defined by the Control of Substances Hazardous to Health Regulations 2002 (COSHH). COSHH regulations require organisations to ensure that employees working with carcinogenic substances are made aware of the risks and the circumstances under which they may be exposed to the carcinogen. All staff must handle cytotoxic medicines in such a way to minimise exposure since little is known about the consequences of repeated exposure to small quantities of cytotoxic drugs. The main routes of potential exposure are via inhalation, absorption through the skin, ingestion through contaminated food or drinks and needle stick injuries.

As there is no defined maximum safe level of exposure or validated method of monitoring exposure, all staff must minimise exposure to cytotoxic chemotherapy by adhering to local policies and procedures and the principles in this guideline.

5.1.1 Risk to staff who prepare, transport, handle and administer cytotoxic chemotherapy will be minimised by:
• providing an adequate protective environment
• ensuring effective written procedures are available to complement ongoing staff training for all elements of the service
• regularly auditing the elements of the cytotoxic chemotherapy service

5.1.2 Due to potential exposure to cytotoxic chemotherapy, pregnant staff should not handle or administer cytotoxic chemotherapy. If this is not operationally possible, then all precautions must be in place to minimise exposure. Pregnant staff should discuss alternative working arrangements with their line manager.

5.1.3 All procedures involving handling of cytotoxic chemotherapy should be risk assessed to determine that all appropriate risk control measures are in place.

5.2 General Guidelines for Handling Patients Waste

5.2.1 Depending on the type of cytotoxic chemotherapy, blood and body fluids may contain high levels of cytotoxic agents for up to 7 days after administration.

5.2.2 Where no data are available, assume that precautions must be taken for 48 hours after administration.

5.2.3 It should be assumed that there would be a high concentration of cytotoxic chemotherapy present in patients’ vomit for up to 2 hours after administration.

5.3 Guidelines for the Hospital/Clinic

5.3.1 A specially designated toilet should be available for patient use.

5.3.2 Mattresses and pillows should be protected with plastic covers and wiped between patients.

5.3.3 Scales should be used for measurement of urine to avoid having to pour urine into a measuring jug. This avoids aerosol formation.
5.3.4 Staff disposing of patients’ excreta must wear a disposable apron and latex procedural gloves e.g. Safeskin PFE-XTRA®

5.3.5 Excreta may be disposed of via the sewer.

5.3.6 Bed linen, which has been contaminated with cytotoxic chemotherapy or waste from patients receiving cytotoxic chemotherapy, should be placed in a pink water-soluble linen bag, which is then placed in a red plastic linen bag before being transported to the laundry.

5.3.7 Patient’s own clothes if contaminated with cytotoxic chemotherapy or blood or body fluids must be double wrapped in polythene bags and given to the patient or carer together with gloves to take home and launder. Contaminated clothes should be washed separately from other clothing in the first instance. The temperature of the water should suit the fabric of the clothing. Advise patient or carer to use gloves when placing items into the washing machine. Patients or carers should be provided with written instructions.

5.4 Guidelines for the Domestic Environment
5.4.1 Patients should be made aware that their excreta would be contaminated with cytotoxic chemotherapy. If possible, they should be given an indication of how long to take precautions for their particular regimen.

5.4.2 The risk to other family members is low and it is safe to dispose of excreta into the domestic sewerage system, avoiding aerosol formation as above.

5.4.3 Disposable gloves should be used when cleaning up vomit or accidental spillage of excreta.

6 SPILLAGE OF CYTOTOXIC CHEMOTHERAPY
6.1 General points
6.1.1 The risk of spillage should be minimised by having appropriate training for all staff involved in the preparation and administration of cytotoxic chemotherapy.

6.1.2 Protocols for dealing with a spillage along with an appropriate spillage kit should be available in all areas involved with the handling of cytotoxic chemotherapy.

6.1.3 The location of spillage kits should be prominently displayed in the clinical areas.

6.1.4 Persons transporting cytotoxic chemotherapy must be trained in the actions to be taken in the event of a spillage and the reporting of such an incident. Any such spillage incident should be recorded in accordance with the respective Health Board’s policy on incident reporting and investigation.

6.1.5 Cytotoxic spillage kits are available from the pharmacy department at Aberdeen Royal Infirmary. Instructions for use are contained within the spillage kit.
6.2 **Additional Procedures for the Management of Spillage in the Domestic Environment**

6.2.1 Hard surfaces should be washed thoroughly with copious amounts of cold water and dried with paper towels.

6.2.2 In the event of spillage on clothing, the items should be removed as quickly as possible and washed separately from other clothing in the first instance. The temperature of the water should suit the fabric of the clothing. Patients receiving cytotoxic chemotherapy in the community should be provided with latex procedural gloves e.g. Safeskin PFE-XTRA® and written instructions on the procedure to be followed in the event of contamination of clothes.

6.2.3 If spillage has penetrated clothing, the contaminated skin should be washed liberally with cold water.

6.2.4 If eyes are contaminated, wash with copious amount of cold water and seek medical advice.

6.2.5 Any bed linen affected should be changed and washed in cold water and then washed normally. Mattresses and furnishings should be cleaned with cold water.

6.2.6 All clean-up materials must be placed in two clear or yellow waste bags, one within the other and sealed by knotting each bag. This should be placed in the sharps bin marked "cytotoxic waste" for disposal.

7 **PROVISION OF CYTOTOXIC CHEMOTHERAPY OUTWITH CANCER CENTRES OR UNITS**

7.1 **Organisation**

7.1.1 There should be a team responsible for the care of patients receiving Near Patient Cytotoxic Chemotherapy (NPCC). This should include the oncologist/haematologist, oncology nursing, oncology pharmacy and primary care representatives.

7.1.2 Cytotoxic chemotherapy protocols suitable for delivery in near patient areas are agreed by the NPCC team and approved by the Clinical Governance Committee and Drug and Therapeutics Committee (or its Oncology Sub Group) of all NHS Board areas involved within the management clinical network. Protocols with a high risk of immediate adverse effects requiring specialist care should be excluded.

7.1.3 Guidelines and procedures are in place to support NPCC. This includes:
- administration of chemotherapy
- prevention and management of extravasation
- anaphylactic shock
- management of neutropenic sepsis and other relevant medical emergencies
- spillage
- disposal

7.2 **Patients and Premises**

7.2.1 The environment in which the NPCC is to be administered is suitable for the treatment being administered. This may include an assessment of the patient’s home if home care is to be provided.
7.2.2 The required facilities and equipment appropriate to the treatment being administered, is available e.g. spillage kit, extravasation kit, cytotoxic disposal bins, resuscitation equipment.

7.2.3 The patient’s condition is sufficiently stable, both physically and psychologically, to allow for the effective delivery of NPCC.

7.2.4 The patient and any involved carers prefer NPCC to other available management options, having been fully involved in discussion of available treatment.

7.3 **Administration**

7.3.1 Procedures exist for pre-admission checks to ensure:

- correct patient
- date and time of administration
- patient name and CHI/patient identification number on the cytotoxic chemotherapy and prescription form
- drug name, dose, volume bolus/infusion, route of administration and administration rate is correct in relation to the prescription
- expiry date and time on the item will not pass before the administration is complete
- steps to be taken if discrepancies found
- requirement for a second check

7.3.2 The prescription is checked against standards 1.1.6. and 1.1.7.

7.3.3 Patients and their main carers are capable of undertaking training to manage any infusion pumps or devices that may be required, and any expected effects of the cytotoxic agents.

7.4 **Support Staff**

7.4.1 Staff responsible for assessing the patient’s condition, administering the NPCC and monitoring the patient have completed an accredited course in chemotherapy management and have demonstrated competency to do this.

7.5 **Shared Care Arrangements**

7.5.1 A shared-care protocol for each chemotherapy protocol suitable for NPCC provides information on the division of responsibility for patient care. The NPCC Team designates named staff responsible for:

- assessment of patient and home environment for suitability
- prescribing chemotherapy
- verifying chemotherapy
- preparing and dispensing chemotherapy
- checking clinical parameters and blood counts before administration
- assessing the patient is fit to receive the chemotherapy
- administration of the chemotherapy
- delivery, storage and disposal arrangements
- possible side effects and how to manage adverse events
- emergency contacts
• follow up arrangements

7.5.2 When completed with individual information for a patient this becomes the Clinical Management Plan and includes review dates with the Centre/Unit.

7.5.3 The prescription (or copy) and the Clinical Management Plan is available to the NPCC team, the GP and the staff administering the chemotherapy

8 CLINICAL GOVERNANCE

8.1.1 Responsibility for the safe use of cytotoxic drugs rests with the Chief Executive of an NHS Board.

8.1.2 The Chief Executive may delegate responsibility for a particular locality to a head of service for chemotherapy, who is usually a consultant oncologist or haematologist.

8.1.3 The head of service for chemotherapy ensures that a robust structure is in place to allow the safe delivery of chemotherapy according to current legislation, national standards and guidelines.

8.1.4 The head of service approves the local training arrangements, nominates named individuals who may prescribe or administer chemotherapy and maintains training records.

8.1.5 The head of service maintains a current list of protocols, and the localities in which these may be used.

8.1.6 The head of service liaises with the Drug and Therapeutics Committee and managed clinical networks to ensure consistency of standards across boundaries.

8.1.7 The head of service approves policies for the safe use of cytotoxic chemotherapy based on these guidelines and reviews these at least every three years.

8.1.8 For NPCC there is a system in place for detecting and reporting adverse events, incidents and near misses. These are notified to the NPCC team and through local clinical governance structures.

8.1.9 All NPCC programmes include a system of quality assurance review. Regular audit of defined outcome measures such as patient acceptability, rate and type of adverse incident reports and hospital visits saved are undertaken.
References

Health and Safety Executive (2003) Safe handling of cytotoxic drugs. HSE Information Sheet MISC615


The Medicines for Human Use (Clinical Trials) Regulations 2004


HDL (2005) 29 Guidance for the safe use of cytotoxic chemotherapy

Joint Council for Clinical Oncology (1994) Quality Control in Cancer Chemotherapy: Managerial and Procedural Aspects

Scottish Cancer Group Quality Improvement Sub-group (March 2004) A Standardised Approach to Chemotherapy Protocols

HDL (2004) 30 Safe Administration of Intrathecal Cytotoxic Chemotherapy

Association of Scottish Trust Chief Pharmacists/Scottish Cancer Care Pharmacy Group (2002) Guidelines for the completion of a pharmaceutical care plan for cancer patients receiving chemotherapy

MEL (1997) 12 Aseptic Dispensing in NHS Hospitals


Clinical Resource and Audit Group (2002) Good Practice Statement for the Preparation of Injections in Near-Patient Areas, including Clinical and Home Environments


Guidelines on Good Distribution Practice (GDP) of Medicinal Products for Human Use. MCA, 2002


Appendix 1

EXTRAVASATION

1.1 General points
1.1.1 Extravasation is defined either as the escape of a chemotherapeutic agent from a vessel into the surrounding tissues by leakage or as an involuntary injection of a drug into the tissues. The frequency of extravasation in adults is considered to be between 0.1% and 6%. The severity of tissue injury is dependent on the type and concentration of the chemotherapeutic agent and the quantity injected. Cytotoxic drugs are classified as irritants or vesicants or exfoliants or inflammatory or neutral.

1.1.2 Irritant drugs
Irritant drugs can cause an inflammatory reaction, aching, swelling, pain or phlebitis at the injection site or along the vein. They may cause sclerosis and hyperpigmentation along the vein, burning, local warmth, discomfort, erythema or tenderness. These symptoms are self-limiting and there are no long-term sequelae.

1.1.3 Vesicant drugs
Vesicant drugs may cause severe and lasting tissue injury and necrosis. Symptoms may arise immediately after extravasation or appear after several days or weeks. Patients may complain of pain or local burning at infusion site, mild erythema, itching or swelling. In small children and infants, observation of the site of the venflon is of vital importance as they would be unable to report such symptoms.

1.1.4 Exfolliants
Exfolliants are capable of causing inflammation and shedding of the skin, but less likely than vesicants to cause tissue death.

1.1.5 Inflammatory
Inflammatory agents are capable of causing mild to moderate inflammation and flare in local tissues.

1.1.6 Neutral
Neutral drugs are inert compounds that do not cause inflammation or damage.
### Table 1: Vesicants and Irritants

<table>
<thead>
<tr>
<th>GROUP A</th>
<th>GROUP B</th>
</tr>
</thead>
<tbody>
<tr>
<td>VESICANTS</td>
<td>IRRITANTS</td>
</tr>
<tr>
<td>Amsacrine</td>
<td>Carboplatin</td>
</tr>
<tr>
<td>Carmustine</td>
<td>Irinotecan</td>
</tr>
<tr>
<td>Dacarbazine</td>
<td>Etoposide</td>
</tr>
<tr>
<td>Nitrogen Mustard</td>
<td>Teniposide</td>
</tr>
<tr>
<td>Dactinomycin</td>
<td></td>
</tr>
<tr>
<td>Mitomycin C</td>
<td></td>
</tr>
<tr>
<td>Daunorubicin</td>
<td></td>
</tr>
<tr>
<td>Doxorubicin</td>
<td></td>
</tr>
<tr>
<td>Epirubicin</td>
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</tr>
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<td>Cisplatin</td>
</tr>
<tr>
<td>Vinblastine</td>
<td>Docetaxel</td>
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<td>Vincristine</td>
<td>Liposomal Daunorubicin</td>
</tr>
<tr>
<td>Vinorelbine</td>
<td>Liposomal Doxorubicin</td>
</tr>
<tr>
<td>Vindesine</td>
<td>Mitozantrone</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>INFLAMMATORY AGENTS</td>
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<tr>
<td>Raltitrexed</td>
<td>Oxaliplatin</td>
</tr>
<tr>
<td>Methotrexate</td>
<td>Topotecan</td>
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<tr>
<td>5-Fluorouracil</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>NEUTRAL</td>
<td></td>
</tr>
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</tr>
<tr>
<td>Bleomycin</td>
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<td>Cladribine</td>
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<td>Ifosfamide</td>
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<td>Melphelan</td>
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<td>Thiotepa</td>
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</table>

### Table 2: Non-Cytotoxic drugs with Vesicant potential

<table>
<thead>
<tr>
<th>GROUP A</th>
<th>GROUP B</th>
</tr>
</thead>
<tbody>
<tr>
<td>VESICANTS</td>
<td>IRRITANTS</td>
</tr>
<tr>
<td>Aciclovir</td>
<td>Adrenaline</td>
</tr>
<tr>
<td>Aminophylline</td>
<td>Clarithromycin</td>
</tr>
<tr>
<td>Amphotericin</td>
<td>Diazemuls</td>
</tr>
<tr>
<td>Calcium Chloride and Gluconate</td>
<td>Dobutamine</td>
</tr>
<tr>
<td>Cefotaxime</td>
<td>Dopamine</td>
</tr>
<tr>
<td>Diazepam</td>
<td>Foscarnet</td>
</tr>
<tr>
<td>Digoxin</td>
<td>Noradrenaline</td>
</tr>
<tr>
<td>Ganciclovir</td>
<td>Phenobarbitone</td>
</tr>
<tr>
<td>Hypertonic saline</td>
<td>Promethazine</td>
</tr>
<tr>
<td>Total Parenteral Nutrition</td>
<td>Vancomycin</td>
</tr>
<tr>
<td>Sodium Bicarbonate</td>
<td></td>
</tr>
</tbody>
</table>
1.2 Prevention of extravasation

1.2.1 The most important approach to extravasation is prevention. Prevention of extravasation takes into account several factors. The position, size and age of the venepuncture site are the most important factors in the prevention of extravasation. The incidence of extravasation can be significantly reduced if the following points are borne in mind:-

- A central or peripherally inserted central catheter (PICC) line should be used for slow infusion of high-risk drugs.

- Drugs should never be administered using a butterfly needle; a catheter should be inserted into a vein. Small and fragile veins should be avoided.

- It is better to administer cytotoxics drugs through a recently sited cannula. Site the cannula so that it can not be dislodged; use the forearm and avoid if possible sites near joints.

- Administer vesicants by slow IV push into the side –arm port of a fast running IV infusion of compatible solution.4

- The most vesicant drug should be administered first.

- Assess the peripheral site continually for signs of redness or swelling. Verify patency of the IV site prior to the administration of the cytotoxic drug by flushing the catheter with sodium chloride 0.9% or glucose 5% for at least 5 minutes. Repeat the procedure at the end of cytotoxic drug administration.

- Inform the patient to report any sensation of burning or pain at the infusion site.

- Administer drugs slowly to allow the drug s to be diluted to the carrier solution and to allow for careful assessment of the IV site.

1.2.2 In children chemotherapy is almost always given via a central line, occasionally a portacath and rarely peripheral vein. If using a portacath or peripheral vein, the recommended precautions should be observed.

1.2.3 Recognising extravasation

The following signs may be present when extravasation has occurred:

- Increased resistance when administering IV drugs.
- Lack of blood return from the cannula (flashback)
- Change in infusion quality, i.e. infusion starts to drip very slowly.
- Swelling or oedema around the cannula site.
- Pain or discomfort around the cannula site (burning or stinging). Observation of small children and infants is of vital importance
- Inflammation, erythema or blistering around infusion site.

1.2.4 Misdiagnosis of extravasation

- Flare Reaction: Blood return usually remains intact and pain is rare. Commonly presents as itchy blotches or hives. Intravenous ondansetron is known to cause such a reaction. Anthracycline drugs such as Doxorubicin, Epirubicin and
Mitozantrone can cause a red discolouration along the vein.

- **Vessel Irritation**: Erythema or redness may be present but blood return is usually intact. Can often cause aching and tightness along the vein. Drugs such as Vinorelbine and Dacarbazine can commonly cause this type of irritation. The application of warmth to dilate the vein can help.

- **Venous Shock**: The muscular wall of the vein can go into spasm. Often caused by the administration of very cold drugs or by very rapid administration. Blood return is often lost. The application of warmth to relax and dilate the vein can help.

- **Phlebitis**: Inflammation of the wall of the vein. The pH of the drug can cause irritation of the vein wall. Drugs such as 5-Fluorouracil, Doxorubicin, Epirubicin, Phenytoin and Etoposide can cause such a reaction.

1.3 **Management of Extravasation**

1.3.1 All extravasations (Group A and B, Table 1) must be treated as per instructions in the ‘FIRST AID’ measures as detailed in Flowchart 1. Then the type of treatment is dependent on the drug extravasated:

a) For Group A drugs; give the 'First Aid' as described on Flowchart 1, then follow the procedure for the individual management of the extravasated drug as described in Flowchart 2 for cytotoxic drugs, and in Flowchart 3 for non-cytotoxic drugs.

b) For Group B cytotoxic drugs; for minor extravasation follow the FIRST AID procedure in Flowchart 1 and apply HOT or COLD compress as recommended in Table 3. For large scale inflammation, consider giving intravenous dose of 100mg hydrocortisone.

c) For Group B non-cytotoxic drugs for minor extravasation follow the FIRST AID procedure in Flowchart 1 and apply HOT or COLD compress as recommended in Table 4. For large scale inflammation, consider giving intravenous dose of 100mg hydrocortisone.

d) For Group B Neutral drugs; for minor extravasation follow the FIRST AID procedure in Flowchart 1 and apply HOT or COLD compress as recommended in Table 4. No further treatment should be required.

1.4 **Referral to the Plastic Surgeons**

In the event of extensive extravasation the plastic surgery on call team MUST be informed as soon as possible. Referral as soon as possible is essential for active treatment using the **Flush Out Technique** carried out by a consultant or specialist registrar under local or general anaesthesia for paediatric patients. This may require the transfer of patients to Aberdeen Royal Infirmary. Further treatment and follow up arrangements recommended by the plastic surgery team will be documented in the medical notes and must be followed by all staff.
1.5 Contents of the Extravasation Kits
Extravasation treatment kits are obtainable from the pharmacy and should be available in all wards and outpatient areas where chemotherapy is administered.

1. 1 x 15g Hydrocortisone Cream 1%
2. 4 x 50ml syringes
3. 4 x 5ml syringes
4. 2 x 25g needles
5. 2 x 19g needles
6. Lignocaine 1% injection
7. Hyaluronidase 1500 units injection
8. Extravasation Management – Procedure
9. Occurrence Record Form (OR 1)
10. Green Card for documenting extravasation
11. Instant COLD / HOT packs (“Jelly” packs). Order from stores - Code EZD 700 C
Flowchart 1 - Management of Extravasation – First Aid

Patient complains of burning, stinging, pain or acute change at the injection site. Induration, erythema, venous discoloration or swelling at the IV site. No blood return is observed. Flow rate reduced.

**Step 1**
Stop Infusion / injection immediately
Disconnect the drip
DO NOT REMOVE THE VENFLON

**Step 2**
Mark the extravasated area with a pen

**Step 3**
Open and use the extravasation kit. Contact IV Chemotherapy Team or Senior Medical or Pharmacy Staff for further advice, if required (bleep 2166)

**Step 4**
Aspirate the extravasated drug, trying to draw blood back from the cannula/venflon. Localise the surrounding area with Lignocaine. May be facilitated by SC injection of 0.9% sodium chloride to dilute the drug around the circumference as 0.1 - 0.2ml aliquots.

**Step 5**
Remove the cannula/venflon.

**Step 6**
Elevate the limb. Follow the individual management of extravasation instructions.
Flowchart 2 - Group A: Cytotoxic Drugs

Paclitaxel, Vinblastine, Vincristine, Vindesine, Vinorelbine.

Follow Steps 1-6, Flowchart 1

Step 7
Give hyaluronidase (in 2ml water for injection) as 0.1 - 0.2ml aliquots SC injections at about 6-8 points around the circumference of the extravasated site.

Step 8
Warm Continuous Compression. This involves applying firmly but without undue pressure a HEAT source for 24 hours. The heat source should not be in direct contact with the skin and a piece of dry gauze should be laid in between.

Step 9
Apply topical hydrocortisone cream 1% every 6 hours as long as erythema lasts. Consider analgesics if in pain.

Step 10
For extensive extravasation, refer to plastic surgery on call team as soon as possible for active treatment to remove extravasated drug.

Step 11
Document in the notes, complete the Occurrence Record Form (OR1) and the Green Card Extravasation Scheme.

Amsacrine, Carmustine, Dacarbazine, Dactinomycin, Daunorubicin, Doxorubicin, Epirubicin, Idarubicin, Mitomycin, Mustine & Streptozocin.

Follow Steps 1-6, Flowchart 1

Step 7
Pulse Cold Compress. This involves applying firmly but without undue pressure a COLD source intermittently (for 30 minutes in every 2 hours) over the area for the first 24 hours. The cold source should not be placed directly on the skin and a piece of dry gauze should be laid in direct contact.

Step 8a
Elevate the limb.

Step 9
Apply topical hydrocortisone cream 1% every 6 hours as long as erythema lasts. Consider analgesics if in pain.

Step 10
For extensive extravasation, refer to plastic surgery on call team as soon as possible for active treatment to remove extravasated drug.

Step 11
Document in the notes, complete the Occurrence Record Form (OR1) and the Green Card Extravasation Scheme.
Flowchart 3 - Group A: Non-Cytotoxic Drugs

Aminophylline, Calcium Chloride, Calcium Gluconate, Phenytoin, Total Parenteral Nutrition, Sodium Bicarbonate, Potassium Chloride >40 mmols/l

Follow Steps 1-6 on Flowchart 1

Step 7
Give hyaluronidase (in 2ml water for injection) as 0.1-0.2ml SC injections at about 6-8 points around the circumference of the extravasated site.

Step 8
Warm Continuous Compression. This involves applying firmly but without undue pressure a HEAT source for 24 hours. The heat source should not be in direct contact with the skin and a piece of dry gauze should be laid in between.

Step 8a
Elevate the limb, Observe the site regularly.

Step 9
Apply topical hydrocortisone 1% cream

Step 10
For extensive extravasation, refer to plastic surgery on call team as soon as possible for active treatment to remove extravasated drug.

Step 11
Document in the notes, complete the Occurrence Record Form (OR1) and the Green Card Extravasation Scheme.

Aciclovir, Amphotericin, Cefotaxime, Diazepam, Digoxin, Ganciclovir

Follow Steps 1-6 on Flowchart 1

Step 7
Pulse Cold Compress. This involves applying firmly but without undue pressure a COLD source intermittently (for 30 minutes in every 2 hours) over the area for the first 24 hours. The cold source should not be placed directly on the skin and a piece of dry gauze should be laid in direct contact.
Table 3: Emergency Treatment of CYTOTOXIC Extravasation Injury

<table>
<thead>
<tr>
<th>Drug</th>
<th>Extent of damage</th>
<th>Class</th>
<th>Hyaluronidase</th>
<th>Saline flush</th>
<th>Topical steroid</th>
<th>Heat/cold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amsacrine</td>
<td>++</td>
<td>Vesicant</td>
<td></td>
<td>✓</td>
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<td>Cold</td>
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<tr>
<td>Bleomycin</td>
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<td>Neutral</td>
<td></td>
<td></td>
<td></td>
<td>Heat</td>
</tr>
<tr>
<td>Carboplatin</td>
<td>+</td>
<td>Irritant</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Cold</td>
</tr>
<tr>
<td>Carmustine</td>
<td>++</td>
<td>Vesicant</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Cold</td>
</tr>
<tr>
<td>Cisplatin</td>
<td>++</td>
<td>Exfoliant</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Heat</td>
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#Apply ice pack for 4 hours. If the local reaction has settled apply heat for 24-48 hrs.
### Table 4: Emergency Treatment of NON-CYTOTOXIC Extravasation Injury

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**References:**

Appendix 2

COMMUNICATION and LIAISON POLICY STATEMENT for PATIENTS RECEIVING CHEMOTHERAPY

2.1 General points
2.1.1 An integral part of providing a competent service to patients receiving cytotoxic chemotherapy is effective and timely communication across NHS Grampian, Orkney and Shetland. The following list of statements sets out the minimum standard of liaison and communication that reflects best clinical practice in this area:

2.2 Information and communication to patients
2.2.1 Every patient receiving cytotoxic chemotherapy must have information sheets explaining the use and side effects of their drugs.

2.2.2 Every patient must have an accurate appointment record for detailing appointment schedules for each administration of cytotoxic chemotherapy.

2.2.3 Every patient must have a record of who their consultant is their location within the organisation and contact details, which can be used by both the patient and professional staff.

2.2.4 Every patient must have instructions on what to do and whom to contact in the event of a problem following discharge from ward or treatment as a day case. Signs and symptoms of neutropenic sepsis must be explained.

2.3 Communication and liaison with Health Care Professionals
2.3.1 Each patient receiving cytotoxic chemotherapy will have a community nurse liaison referral form completed at start of treatment, informing the community nursing staff of the following:

   a) diagnosis
   b) treatment plan and any changes to this
   c) drugs and any particular instructions e.g. Hickman line management and or potentially complex side effects e.g. high risk of neutropenic sepsis
   d) patients and carers understanding of their illness and treatment
   e) their main problems (physical, social or psychological)
   f) who is responsible for follow-up e.g. hospital or primary care

2.3.1 This standard applies to both in-patient and day case treatments.

2.3.2 The primary care team will receive the immediate discharge document (IDD) within 36 hours of discharge. This should comply with SIGN 65 and the minimum data set.

   a) Patients must not be relied on to deliver this document to the primary health care team – not all patients are able or understand the importance of passing this information onto the primary health care team.
b) Documentation must be completed for all chemotherapy treatments, whether
delivered as inpatient or outpatient.

2.3.3 The primary health care team must receive information regarding patients in clinical
trials. This will detail what trial they are participating in, what this entails and who to
contact for further information.

2.3.4 Where cytotoxic chemotherapy is delivered in community settings, this will be given
according to agreed policies and with clear lines of communication and
responsibility. Additionally, where standard cytotoxic chemotherapy regimes are to
be delivered there should be agreed protocols and shared-care arrangements in
place.

2.3.5 The primary health care team and any other health care professional will inform the
cancer centre or unit of any problem that is likely to influence the future
management and care of a patient receiving cytotoxic chemotherapy.