

**NHS TAYSIDE**

**CLINICAL**

**EXTRAVASATION POLICY FOR  
ALL DRUGS, CHEMOTHERAPY  
& NON-CHEMOTHERAPY**

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**Review Group:  
Chemotherapy Co-ordination Group  
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**Signed:**

**Executive Lead  
(Authorised Signatory)**

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\*Each Ward must complete Appendix 3 and inform all staff of the nearest Extravasation Kit

## **1. Purpose and Scope**

HDL (2005) 29 section 7 requires NHS Tayside to produce an evidence based guideline (procedure) for the rapid treatment of extravasation injuries due to cytotoxic chemotherapy and any other drug capable of causing this type of injury. This procedure also provides a framework for education and training for all professional groups involved in the administration of intravenous chemotherapy both cytotoxic and non-cytotoxic and to streamline the care of these patients to staff experienced in dealing with extravasation injuries. There is also a requirement to provide extravasation kits. This document with appendices sets out to address all of these requirements.

## **2. Aims and Objectives**

Two strategies for the treatment of extravasation injuries are described in the literature. The first approach requires the parenteral and local application of antidotes for all extravasation injuries. The second approach involves a flush out technique carried out by plastic surgeons or other trained staff for the more serious injuries.

A decision has been taken to follow the surgical approach in the treatment of drug extravasation within NHS Tayside. This decision was reached after consideration of the comparative experience of staff available to support the antidote approach with the experience of the plastic surgeons in the surgical flush technique (Gault Technique).

The rapid treatment of patients with extravasation injuries is key to obtaining a successful outcome to what are expected events for patients being given intravenous therapy. A planned approach to dealing with these events will improve awareness, treatment and the quality of patient care.

The appendices attached to this policy set out to assist staff in:

- Being aware of extravasation risk factors
- Recognising signs and clinical significance of extravasation injuries
- Administering initial first aid to an extravasation injury
- Triage patients to experienced carers as required
- Report injuries appropriately

## **References**

- Dorr R.T. Antidotes to Vesicant Chemotherapy Extravasations Blood Reviews 1990; 4: 41-60
- Bertelli G. Prevention and Management of Extravasation of Cytotoxic Drugs. Drug Safety 1995; 12(4): 245-255
- Davies J. Gault D. Buchdahl. Preventing the scars of neonatal intensive care Archives of Diseases in Childhood. 1994; 70 50-51

### 3. Roles and Responsibilities

This document describes the scope of clinical practice and supporting documentation required to ensure the safe management of extravasation injuries. All nursing staff directly involved in the administration of intravenous medication should undertake regular training and updates. Nursing staff undertaking the administration of cytotoxic chemotherapy must undertake specific training to make them aware of the specific issues related to that treatment modality.

This protocol must be implemented by all Nursing Staff working in NHS Tayside.

The procedures set out in the appendices describes the scope of practice required for all Medical Staff involved in the administration of intravenous medication with respect to the treatment of drug extravasation.

**ALL STAFF WHO DETECT AN EXTRAVASATION MUST INSTIGATE ' INITIAL FIRST AID ' MEASURES (Page 8) IMMEDIATELY.**

**Each ward must complete Appendix 3 and make the information available to all staff involved in the administration of chemotherapy and then leave a copy on a ward notice board.**

### 4. Key Contacts

Intranet Gate Keeper                      Ms Alison Davie Tel 01382 660111/ Ext. 36812

#### **Clinical Advice**

Chemotherapy Nurse Specialists on Ward 32/32 DCA Ninewells, 36043

Macmillan Pharmacist Practitioner Bleep 4022

Principal Oncology Pharmacist Bleep 4723,

Principal Paediatric Pharmacist Bleep 4024

Plastic Surgeon Specialist Registrar (Extravasation Liaison) 3124 (or 3049) or on-call Plastic Surgeon.

For paediatric patients please inform Dr R Wilkie Bleep 4199 or mobile through Ninewells Switchboard.

#### **Training Co-ordinators**

Principal Oncology Pharmacist Bleep 4723, Ninewells

Clinical Pharmacist Bleep 5356 Perth

Department of Nursing & Patient Services Lead Nurse Ext. 32665

**All bleep numbers can be obtained by phoning 01382 660111**

## NHS TAYSIDE POLICY/STRATEGY APPROVAL CHECKLIST

This checklist must be completed and forwarded with policy to the appropriate forum/committee for approval.

**POLICY/STRATEGY AREA:** (See Intranet Framework) Clinical

**POLICY/STRATEGY TITLE:** Extravasation Policy for All Drugs, Chemotherapy & Non-Chemotherapy

**LEAD OFFICER:** Executive Officer – Medical Director Policy Lead – Mark Parsons

<b>Why has this policy/strategy been developed?</b>		<b>To reduce risks associated with medicines extravasations</b>	
<b>Has the policy/strategy been developed in accordance with or related to legislation? – Please give details of applicable legislation.</b>		<b>In accordance with HDL (2005) 29 Section 7</b>	
<b>Has a risk control plan been developed? Who is the owner of the risk?</b>		<b>No</b>	
<b>Who has been involved/consulted in the development of the policy/strategy?</b>		<b>Department of Plastic and Oral Surgery, Oncology – Chemotherapy Co-ordination Group</b>	
<b>Has the policy/strategy been assessed for Equality and Diversity in relation to:-</b>		<b>Has the policy/strategy been assessed For Equality and Diversity not to disadvantage the following groups:-</b>	
<b>Race/Ethnicity</b> <b>Gender</b> <b>Age</b> <b>Religion/Faith</b> <b>Disability</b> <b>Sexual Orientation</b>	<b>Please indicate Yes/No for the following:</b> Yes Yes Yes Yes Yes Yes	<b>Minority Ethnic Communities (includes Gypsy/Travellers, Refugees &amp; Asylum Seekers)</b> <b>Women and Men</b> <b>Religious &amp; Faith Groups</b> <b>Disabled People</b> <b>Children and Young People</b> <b>Lesbian, Gay, Bisexual &amp; Transgender Community</b>	<b>Please indicate Yes/No for the following:</b> Yes  Yes Yes Yes Yes Yes
<b>Does the policy/strategy contain evidence of the Equality &amp; Diversity Impact Assessment Process?</b>		<b>Yes – Rapid Impact Checklist</b>	
<b>Is there an implementation plan?</b>		<b>No – Already Implemented</b>	
<b>Which officers are responsible for implementation?</b>		<b>N/A Revised Policy – already in use</b>	
<b>When will the policy/strategy take effect?</b>		<b>Immediate Effect</b>	
<b>Who must comply with the policy/strategy?</b>		<b>Clinical staff involved in intravenous medicine use</b>	
<b>How will they be informed of their responsibilities?</b>		<b>NHS Tayside staff already aware of responsibilities</b>	
<b>Is any training required?</b>		<b>Yes – part of existing training</b>	
<b>If yes, has any been arranged?</b>		<b>Yes – training in place</b>	
<b>Are there any cost implications?</b>		<b>No</b>	
<b>If yes, please detail costs and note source of funding</b>		<b>N/A</b>	
<b>Who is responsible for auditing the implementation of the policy/strategy?</b>		<b>Policy Lead &amp; Lead Groups (Department of Plastic and Oral Surgery, Oncology – Chemotherapy Co-ordination Group)</b>	
<b>What is the audit interval?</b>		<b>Bi-annual</b>	
<b>Who will receive the audit reports?</b>		<b>Department of Plastic and Oral Surgery, Oncology – Chemotherapy Co-ordination Group</b>	
<b>When will the policy/strategy be reviewed and by whom? (please give designation)</b>		<b>Review date set up for June 2010 but will be updated as and when required.</b>	

**Name:** Mr R M Parsons

**Date:** June 2008

## EXTRAVASATION PROCEDURE

### 1. Awareness of Risk Factors

#### Patient Related Risk Factors

- 1.1 Extravasation injuries are both more common and severe in children and neonates compared to adults. Infants may not be able to localise or report pain.
- 1.2 Elderly patients can be more at risk of extravasating due to:
  - a) Interference with the cannula when the patient is confused or agitated.
  - b) Reduced pain sensation.
  - c) Fragile skin and veins.
- 1.3 Patients with communication difficulties of whatever cause will be more at risk of extravasation injuries going unnoticed. Draw attention to these risks with the patient's carers, parents, partners etc. With patients unable to speak English this must be done through interpreters or relatives.

#### Risks Related to Medical History

- 1.4 Cancer patients have additional risk due to:
  - a) Fragile, mobile veins that are difficult to cannulate.
  - b) 'Recall' phenomenon, in patients previously given radiotherapy.
  - c) A previous extravasation injury is at risk of further damage when subsequent chemotherapy is given even if administered at a different site.
  - d) Limbs with lymphoedema due to poor venous flow.
- 1.5 Repeated venepunctures either due to previous treatments or intravenous drug abuse.
- 1.6 Other disease states may increase the risk of extravasation injuries or inhibit their detection, such as:
  - a) Peripheral vascular disease.
  - b) Raynaud's Phenomenon.
  - c) Diabetes.
  - d) Superior Vena Cava Syndrome.
  - e) Previous Cardiovascular Accidents.
  - f) Patients after Cerebrovascular Accidents

#### Administration Site Risks

- 1.7 Severe extravasation injuries are more associated with the dorsum of the hand and foot, ankle, antecubital fossa and near joints or joint spaces where there is little soft tissue for the protection of underlying structures.
- 1.8 Infusing vesicant drugs via peripheral venous devices.

#### Administration Technique Associated Risks

- 1.9 The cannula position, the cannula calibre and time in-situ are the factors that have the greatest bearing on the likelihood of problems occurring.
- 1.10 If difficulties were experienced or multiple attempts at venepuncture were required before the intravenous device is established.
- 1.11 The use of steel needles.
- 1.12 Extravasations occurring during the night may not be noticed immediately.
- 1.13 The administration of an intravenous medicine by inexperienced staff.
- 1.14 The use of winged infusion devices i.e. Butterfly needles, are associated with a greater risk of extravasation and their use is not recommended.
- 1.15 An extravasation may cause an infusion pump to turn off and begin to alarm. When pumps continue to alarm, the possibility of an extravasation should be investigated.

## **2. Recognition and Assessment of Injuries**

- 2.1 Extravasation of medications must be treated as a medical emergency and immediate action must be taken.
- 2.2 The designated members of staff sufficiently experienced in assessing extravasation injuries must be informed immediately, in accordance with the contact list.
- 2.3 Early detection is important to minimise damage. Extravasation should be suspected if one or more of the following is observed or experienced by the patient:
  - a) The patient complains of moderate or severe pain, burning, stinging or any acute changes at the injection site.**
  - b) There is redness, swelling or leakage at the injection site.**
  - c) The infusion does not flow freely, or resistance is experienced when attempting to give drugs by bolus into fast flowing drips or infusions.**
  - d) No blood return is observed on aspiration – presence of blood however does not exclude extravasation.**
- 2.4 The administration of daunorubicin or doxorubicin (and possibly other anthracyclines) is associated with a flare reaction causing raised red streaks following the line of the vein and pruritis or oedema. Although there is good blood return the patient may experience pain and stinging, however these episodes are transient. Follow the immediate treatment instruction for extravasation (see Initial First Aid page 8) and apply hydrocortisone 1% cream. If uncertain whether a flare or extravasation has occurred, reassess after 1 hour.

### 3. Initial First Aid

- 3.1 Explain to the patient what you suspect may have happened and the procedures for dealing with it so as to obtain their co-operation. Inform the patient's medical team and document as required.
- 3.2 Stop the injection/infusion immediately **leaving the cannula in place**. Where the abrupt discontinuation of a treatment would be clinically detrimental inform the medical team immediately.
- 3.3 Aspirate any residual drug and blood from the cannula. This will allow the direct removal of as much of the drug as possible at the site of the extravasation and thereby minimise progressive local injury and reduce subsequent tissue damage.
- 3.4 Remove the cannula.
- 3.5 Apply hydrocortisone cream 1% to the site of the extravasation injury.
- 3.6 It is important to determine whether the agent that has extravasated requires the application of a hot or cold compress (See the column headings in Tables 1 and 2 pages 10/11). Using the wrong temperature compress can exacerbate the injury.
- 3.7 Apply the correct compress.
- 3.8 Elevate the affected area.
- 3.9 Refer to a member of staff experienced in assessing the treatment requirements. This should take place as matter of urgency. Chemotherapy Nurse Specialists on Ward 32 DCA Ninewells, the Oncology Pharmacists Bleep 4022/4723, Principal Paediatric Pharmacist 4024 or Plastic Surgeon Specialist Registrar (Extravasation Liaison) 3124 (or 3049).  
For paediatric patients please inform Dr R Wilkie Bleep 4199 or mobile through Ninewells Switchboard.

### 4. Analgesia For Extravasation Induced Pain

Analgesia should be initiated only after the patients pain requirements have been assessed.

- 4.1 FOR ADULT PATIENTS consider Ibuprofen 400mg tablets 8 hourly and/or dihydrocodeine 30mg tablets 4 hourly. Do not be afraid to move on to more potent opioid analgesics if pain is severe. Please bear in mind contra-indications of non-steroidal use (examples being renal impairment, low platelets and gastrointestinal bleeding).
- 4.2 FOR PAEDIATRIC PATIENTS use;  
Paracetamol 15mg/kg orally or 20mg/kg to the nearest suppository size available 6 hourly.  
If additional pain control is required use the current Paediatric Pain Policy or contact the on-call Paediatric Medical Specialist Registrar at Ninewells Hospital Dundee.

### 5. Treatment After Initial First Aid



- 5.1 Obtain the Extravasation Kit; (see Appendix 3 page 18 for locations).
- 5.2 Confirm that 'Initial first aid' (page 8) has been followed.
- 5.3 For chemotherapy extravasations use table 1 (Page 10), for non-chemotherapy extravasations use table 2 (Page 11)

## **6. Extravasation Classifications**

### **6.1 Vescicants**

Capable of causing pain, inflammation and blistering of the skin, underlying flesh and structures, leading to tissue death and necrosis.

### **6.2 Exfoliants**

Capable of causing inflammation and shedding of the skin, but less likely to cause tissue death.

### **6.3 Irritants**

Capable of causing inflammation and irritation, rarely proceeding to breakdown of the tissue

### **6.4 Inflammatory Agents**

Capable of causing inflammation and irritation and flare in local tissues.

## 7. Cytotoxic Extravasation Table

Determine which type of drug has extravasated, and then use the following table to follow the treatment procedure for that class of extravasated drug.

**TABLE 1**

<b>VESICANTS</b>	<b>EXFOLIANTS</b>	<b>IRRITANTS</b>	<b>INFLAM. AGENTS</b>	<b>NEUTRALS</b>
Amsacrine (C)	Cisplatin (H)	Carboplatin (H)	Bortezomib (H)	Asparaginase
Carmustine (C)	Liposomal Daunorubicin(C)	Etoposide (H)	5-Fluorouracil (C)	Bevacizumab
Dacarbazine (C)	Docetaxol (H)	Irinotecan (H)	Methotrexate (H)	Bleomycin
Dactinomycin (C)	Liposomal Doxorubicin(C)	Mylotarg (C)	Raltitrexed (C)	bortezomib
Daunorubicin (C)	Mitoxantrone (C)	Teniposide (H)		Cetuximab
Doxorubicin (C)	Oxaliplatin (H)	Arsenic Trisenox (H)		Cladribine
Epirubicin (C)	Topotecan (H)			Clofarabine
Idarubicin (C)				Cyclophos.
Mitomycin C (C)				Cytarabine
Mustine (C)				Fludarabine
Paclitaxel (H)				Gemcitabine
Streptozocin (C)				Ifosfamide
Vinblastine (H)				Melphalan
Vincristine (H)				Pentostatin
Vindesine (H)				Pemetrexed
Vinorelbine (H)				Rituximab
				Thiotepa
				Trastuzumab
<b>Refer to vesicant Page 12</b>	<b>Refer to Exfoliants Page 13</b>	<b>Refer to Irritants Page 14</b>	<b>Refer to Inflammatory Page 15</b>	<b>Refer to Neutral Page 15</b>

**H= Apply a hot compress**

**C = Apply a cold compress**

## 8. Non- Cytotoxic Extravasation Table

Determine which type of drug has extravasated, then using the table; follow the treatment procedure for that class of extravasated drug.

**Table 2**

<b>VESICANTS</b>	<b>IRRITANTS</b>
Aciclovir (C)	Adrenaline (H)
Aminophylline (H)	Amiodarone (C)
Amphotericin (C)	Clarithromycin (C)
Calcium Chloride (H)	Diazemuls (C)
Calcium Gluconate (H)	Dobutamine (H)
Cefotaxime (C)	Dopamine (H)
Diazepam (C)	Erythromycin (C)
Digoxin (C)	Foscarnet (C)
Fluorescein (C)	Noradrenaline (H)
Ganciclovir (C)	Phenobarbitone (C)
Hypertonic NaCl sol <sup>n</sup> > 5% (H)	Phentolamine (C)
Parenteral Nutrition (H)	Promethazine (C)
Phenytoin (H)	Vancomycin (C)
Potassium Chloride (>40mmols/l) (H)	
Sodium Bicarb. (H)	
Venofer Iron Sucrose IV inj. (C)	
<b>Caution with all hypertonic sol<sup>ns</sup>.</b>	
<b>Refer to vesicants page 12</b>	<b>Refer to irritants Page 14</b>

**H= Apply a hot compress**

**C = Apply a cold compress**

### General points

- Although the extravasation of very small amounts of vesicants may cause only minor symptoms requiring minimal intervention, advice should always be sought regarding treatment and the patient monitored closely.

- In the event of a more extensive extravasation, or the extravasation of a substance likely to cause a serious reaction, an urgent referral to the on call Plastic Surgeons is essential if effective treatment is to take place.

## 9. Mixed Extravasations

In the event of a mixed extravasation of agents from different classifications the following policy applies:

- 9.1 The order of precedence for the different classification is Vesicant > Exfoliant > Irritant > takes precedence over exfoliants, irritant or inflammatory agent.
- 9.2 For drugs of the same classification those requiring a cold compress take precedence over applying a hot compress – apply a cold compress.
- 9.3 For mixed extravasations from drugs in different classifications, apply the temperature compression of the drug that takes precedence.

## 10. Vesicants

- 10.1 Confirm all the initial first aid procedures have been completed.
- 10.2 The important indicator of the severity of extravasation is pain.
- 10.3 For small amounts of extravasated drug causing only minor symptoms apply 1% hydrocortisone cream, apply **HOT or COLD COMPRESS as recommended in tables 1 & 2** and for adults give an intravenous dose of 100mg Hydrocortisone and 4mg dose of oral chlorphenamine. For paediatric patients give the appropriate paediatric dose.
- 10.4 **DO NOT COVER WITH BANDAGING** and observe hourly for 24 hours.
- 10.5 Mark any demarcated area with an indelible pen.
- 10.6 In the event of the development of more severe symptoms go to point 10.9.
- 10.7 The extravasation injuries treated with specific antidotes should be reviewed hourly over the first 12 hours for signs of deterioration and 4 hourly thereafter. If any deterioration is noted contact the on call plastic surgeon **IMMEDIATELY**.
- 10.8 In the event of a more extensive extravasation refer to the Plastic Surgery on call team. Referral within a few hours is essential if active treatment to remove extravasated substance is to be performed. **ACTIVE TREATMENT USING THE FLUSH OUT TECHNIQUE IS TO BE CARRIED OUT BY A SENIOR PLASTIC SURGEON ONLY UNDER LOCAL ANAESTHETIC or GENERAL ANAESTHETIC FOR PAEDIATRIC PATIENTS.** This may require the patient to be transferred to Ninewells Hospital.

**IF THE PATIENT'S PLATELET COUNT IS LOW OR IF THEIR CLOTTING IS ABNORMAL DUE TO A CLINICAL CONDITION OR DRUG, INFORM THE PLASTIC SURGEON.**

- 10.9 In areas with a minimal subcutaneous fat volume, the plastic surgeons will wash the surface of the skin with povidone iodine surgical scrub 1:1 in sterile Sodium Chloride

0.9%w/v. Irrigate subcutaneously with hyaluronidase, make a number of incisions around the site of extravasation and commence wash out with Sodium Chloride 0.9% 500ml using a blunt ended cannula with side holes e.g. Verres needle, using aseptic technique. **For Oxaliplatin use 5% Glucose.**

- 10.10 In areas with a larger amount of subcutaneous fat the plastic surgeon may use liposuction if irrigation is inappropriate.
- 10.11 After surgical flush-out, the area should be covered with gauze soaked in betadine surgical scrub 1:1 in Sterile Sodium Chloride 0.9%w/v. Apply sterile paraffin gauze pad with sterile gauze and bandage with conforming bandage. It is important that a clear record of any guidance for further treatment and follow up arrangements required by the plastic surgeon are clearly written in the notes and followed by all staff.
- 10.12 Provide appropriate analgesia (See section 4 page 8).
- 10.13 Patients undergoing any invasive procedure should receive prophylactic antibiotic cover. For adults, oral clindamycin 300mg should be prescribed 4 times daily for 5 days. For paediatric patients discuss with the patients Paediatric Consultant.
- 10.14 The details of the extravasation incident together with all the treatment administered must be documented in the patient's medical notes and NHS Tayside's Incident Reporting Form (IR1). For chemotherapy patients only, the Green extravasation form, available in the extravasation kit or from the Medicines Information Department, Ninewells Hospital, should be completed and then handed to the Pharmacist who should in the first instance forward it to the Principal Pharmacist Oncology & Surgery, Ninewells Hospital.
- 10.15 The Plastic Surgeon may request continued monitoring for several days. Confirmation should be sought from the Plastic Surgeon about follow up before discharge.
- 10.16 If the skin viability is compromised, then continued follow up of the patient by the Plastic Surgeons is essential.

## **11. Exfoliants**

- 11.1 Confirm all the initial first aid procedures have been completed.
- 11.2 For extensive extravasations of exfoliant drugs treat in the same way as a vesicant extravasation. The important indicator of the severity of extravasation is pain.
- 11.3 For small amounts of extravasated drug causing only minor symptoms apply 1% hydrocortisone cream, apply **HOT or COLD COMPRESS as recommended in tables 1 & 2** and for adults give an intravenous dose of 100mg Hydrocortisone and 4mg dose of oral chlorphenamine. For paediatric patients give the appropriate paediatric dose.
- 11.4 **DO NOT COVER WITH BANDAGING** and observe hourly for 24 hours.
- 11.5 Mark any demarcated area with an indelible pen.
- 11.6 Provide appropriate analgesia (See section 4 page 8).
- 11.7 In the event of the development of more severe symptoms go to point 10.9 in the vesicant treatment instructions.

- 11.8 Patients undergoing any invasive procedure should receive prophylactic antibiotic cover. For adults, oral clindamycin 300mg should be prescribed 4 times daily for 5 days. For paediatric patients discuss with the patient's Paediatric Consultant.
- 11.9 The details of the extravasation incident together with all the treatment administered must be documented in the patient's medical notes and NHS Tayside's Incident Reporting Form (IR1). The Green extravasation form, available in the extravasation kit or from the Medicines Information Department, Ninewells Hospital, should be completed and then handed to the Pharmacist who should in the first instance forward it to the Principal Pharmacist Oncology & Surgery, Ninewells Hospital.
- 11.10 The Plastic Surgeon may request continued monitoring for several days. Confirmation should be sought from the Plastic Surgeon about follow up before discharge.
- 11.11 If the skin viability is compromised, then continued follow up of the patient by the Plastic Surgeons is essential.

## 12. Irritants

- 12.1 Confirm all the initial first aid procedures have been completed.
- 12.2 With irritant drugs there exists the possibility of some local inflammation and rarely necrosis, and/or some pain in sensitive individuals.
- 12.3 For small amounts of extravasated drug causing only minor symptoms apply 1% hydrocortisone cream, apply **HOT or COLD COMPRESS as recommended in tables 1 & 2** and for adults give an intravenous dose of 100mg Hydrocortisone and 4mg dose of oral chlorphenamine. For paediatric patients give the appropriate paediatric doses of these agents.
- 12.4 For a large volume extravasation consider the risk of a more significant reaction.
- 12.5 Mark any demarcated area with an indelible pen.
- 12.6 Provide appropriate analgesia (See section 4 page 8).
- 12.7 Inform the patient that if there appears to be any deterioration in the injury they must contact the ward immediately. Arrange for the injury to be reviewed the following day in at the department where the injury occurred.
- 12.8 If there is deterioration in the affected area contact the on-call plastic surgeons as a matter of urgency.
- 12.9 The details of the extravasation incident together with all the treatment administered must be documented in the patient's medical notes and NHS Tayside's Incident Reporting Form (IR1). The Green extravasation form, available in the extravasation kit or from the Medicines Information Department, Ninewells Hospital, should be completed and then handed to the Pharmacist who should in the first instance forward it to the Principal Pharmacist Oncology & Surgery, Ninewells Hospital.
- 12.10 If the skin viability is compromised, then continued follow up of the patient by the Plastic Surgeons is essential.

## 13. Inflammatory Agents

- 13.1 Confirm all the initial first aid procedures have been completed.
- 13.2 Apply 1% hydrocortisone cream; apply **HOT or COLD COMPRESS as recommended in the tables 1 & 2. If symptoms are severe** give an intravenous dose of 100mg Hydrocortisone and 4mg dose of oral chlorphenamine. For paediatric patients give the appropriate paediatric dose when required.
- 13.3 Mark any demarcated area with an indelible pen.
- 13.4 Provide appropriate analgesia (See section 4 page 8).
- 13.5 Inform the patient that if there appears to be any deterioration in the injury they must contact the ward immediately. Arrange for the injury to be reviewed the following day in at the department where the injury occurred.
- 13.6 If there is significant deterioration in the affected area contact the on-call plastic surgeons.
- 13.7 The details of the extravasation incident together with all the treatment administered must be documented in the patient's medical notes and NHS Tayside's Incident Reporting Form (IR1). The Green extravasation form, available in the extravasation kit or from the Medicines Information Department, Ninewells Hospital, should be completed and then handed to the Pharmacist who should in the first instance forward it to the Principal Pharmacist Oncology & Surgery, Ninewells Hospital.

#### **14. Neutral**

- 14.1 If extravasation of a non-irritant occurs, aspirate as much fluid as possible then remove the cannula. No further treatment should be required. Manage the situation symptomatically.

## Appendix 2

### Extravasation Kit Contents

1. Povidone Iodine Surgical scrub 500ml ..... × 1
2. Chlorphenamine 4mg tablets 30 ..... × 1
3. Disposable Scalpel No. 15 ..... × 1
4. Three way luer lock taps 10cm ..... × 2
5. Hyaluronidase 1500 U.S.P + WFI-2ml ..... × 3
6. Hydrocortisone Cream 1% (15G) ..... × 2
7. Lignocaine 1% 10ml ..... × 2
8. Paraffin Gauze 10cm<sup>2</sup> ..... × 2
9. Sodium Chloride 0.9% (Sterile sachets 25ml) ..... × 4
10. Hydrocortisone 100mg intravenous injection ..... × 2
11. Green Documentation Card ..... × 2
12. Portex Hydroflow Frazier Type 19G Needles ..... × 2
13. Disposable Syringes 10ml ..... × 2
14. Disposable Syringes 30ml ..... × 2
15. Disposable Syringes 50ml ..... × 2
16. Disposable needles 21g ..... × 5
17. Disposable needles 23g ..... × 10
18. Disposable needles 25g ..... × 5
19. Sterile Gauze Swabs 5's Large ..... × 1
20. Sodium Chloride 0.9% 10ml ..... × 2



### **Other Items Required For The Treatment Of Extravasation**

1. In the absence of a COLDHOT PACK 3M, use a convenient source of ice and a pliable waterproof container for cold compresses and a convenient dressing and a local hot water source for warm compress.
2. COLDHOT PACK 3M ARE STORED IN A FREEZER. Use directly from the freezer for cold compresses and place in boiling water for 10 minutes before being used as a hot compress.

## **Appendix 3**

### **THE CHEMOTHERAPY EXTRAVASATION KIT STORAGE SITES**

#### **Ninewells**

##### **Paediatric Department**

1. Paediatric Outpatient Clinic in the Emergency Drug Cupboard
2. Ward 29 In the Oral Medicines Cupboard (Group 2)

Hot/Cold compress stored in ward fridge

#### **Haematology Ward Ninewells**

1. Treatment room. (Hot/Cold compress in the fridge.)

#### **Oncology Ward (and Day Case Area)**

1. On both the ward and day case units
2. (Hot/Cold compress in the fridge ward 32)

#### **PERTH ROYAL INFIRMARY**

1. Treatment Room Ward 3 (Hot/Cold compress in the fridge)

### **NON-CHEMOTHERAPY EXTRAVASATION KITS**

These will be kept in the Ninewells Hospital and Perth Royal Infirmary Emergency Drug Cupboards

Other hospitals and wards within hospitals can obtain kits from Pharmacy Stores at Ninewells Hospital and record where they are stored below.

**Nearest Non-Chemotherapy Extravasation Kits**  
**Please Complete**

**Hospital** .....

**Ward** .....

**Locations** .....

### **Additional Information For Chemotherapy Extravasations Only**

1. For chemotherapy extravasations only, complete 2 copies of the “Chemotherapy Extravasation Audit Form” placing one copy in the notes.
2. The other extravasation record sheet and the green record card should be sent in the first instance to the Principal Oncology Pharmacist for audit purposes.
3. The patient should be given a patient information sheet on extravasations.

# 1. Rapid Impact Checklist (RIC)

Each policy must include a completed and signed template of assessment

<p><b>Which groups</b> of the population do you think will be affected by this proposal?</p> <ul style="list-style-type: none"> <li>• minority ethnic people (incl. gypsy/travellers, refugees &amp; asylum seekers)</li> <li>• women and men</li> <li>• people in religious/faith groups</li> <li>• disabled people</li> <li>• older people, children and young people</li> <li>• lesbian, gay, bisexual and transgender people</li> </ul>		<p>• <u>people of low income</u></p> <p>• people with mental health problems</p> <p>• homeless people</p> <p>• people involved in criminal justice system</p> <p>• staff</p> <p>Other Groups:</p>
<p align="center"><b>ALL GROUPS &amp; STAFF</b></p>		
<p>N.B. The word proposal is used below as shorthand for any policy, procedure, strategy or proposal that might be assessed.</p>		<p>What positive and negative impacts do you think there may be?</p>
<p>What impact will the proposal have on lifestyles? For example, will the changes affect:</p> <ul style="list-style-type: none"> <li>• Diet and nutrition?</li> <li>• Exercise and physical activity?</li> <li>• Substance use: tobacco, alcohol or drugs?</li> <li>• Risk taking behaviour?</li> <li>• Education and learning, or skills?</li> </ul>		<p>Which groups will be affected by these impacts?</p> <p>There will be a positive impact by improving staff skills, develop treatment via support from clinical experts. There will also be a positive impact on risk taking behaviour as staff will be supported when undertaking cannulation of patients for intravenous therapy.</p>
<p>Will the proposal have any impact on the social environment? Things that might be affected include</p> <ul style="list-style-type: none"> <li>• Social status</li> <li>• Employment (paid or unpaid)</li> <li>• Social/family support</li> <li>• Stress</li> <li>• Income</li> </ul>		<p>No.</p>
<p>Will the proposal have any impact on</p> <ul style="list-style-type: none"> <li>• Discrimination?</li> <li>• Equality of opportunity?</li> <li>• Relations between groups?</li> </ul>		<p>No.</p>
<p>Will the proposal have an impact on the physical environment? For example, will there be impacts on:</p> <ul style="list-style-type: none"> <li>• Living conditions?</li> <li>• Working conditions?</li> <li>• Accidental injuries or public safety?</li> <li>• Transmission of infectious disease?</li> </ul>		<p>The policy will positively reduce capacity for excessive skin damage as a result of medicine extravasation and maintain tissue viability reducing potential skin infections.</p>
<p>Will the proposal affect access to and experience of services? For example,</p> <ul style="list-style-type: none"> <li>• Health care</li> <li>• Transport</li> <li>• Social services</li> <li>• Housing services</li> <li>• Education</li> </ul>		<p>There will be a positive impact as it will improve clinicians' understanding for the need for emergency treatment for patients if significant extravasations have occurred.</p>

<b>Rapid Impact Checklist (RIC): Summary Sheet</b> <b><u>Each policy must include a completed and signed template of assessment</u></b>	
<b>1. POSITIVE IMPACTS (NOTE THE GROUPS AFFECTED)</b> <ul style="list-style-type: none"> <li>• There will be a positive impact by improving staff skills, develop treatment via support from clinical experts.</li> <li>• There will also be a positive impact on risk taking behaviour as staff will be supported when undertaking cannulation of patients for intravenous therapy.</li> <li>• The policy will positively reduce capacity for excessive skin damage as a result of medicine extravasation and maintain tissue viability reducing potential skin infections.</li> <li>• There will be a positive impact as it will improve clinicians' understanding for the need for emergency treatment for patients if significant extravasations have occurred.</li> </ul>	<b>2. NEGATIVE IMPACTS (NOTE THE GROUPS AFFECTED)</b> <p>None identified.</p>
<b>3. ADDITIONAL INFORMATION AND EVIDENCE REQUIRED</b> <p>None.</p>	
<b>4. RECOMMENDATIONS</b> <p>None.</p>	
<b>5. WHY NOT? FROM THE OUTCOME OF THE RIC, HAVE NEGATIVE IMPACTS BEEN IDENTIFIED FOR RACE OR OTHER EQUALITY GROUPS? HAS A FULL EQIA PROCESS BEEN RECOMMENDED? IF NOT, WHY NOT?</b> <p>This document has taken into account young and old patients with regard to their increase risk factors and patients with communication difficulties.</p> <p>Following RIC a full Impact Assessment is considered not to be required.</p>	

Manager's Signature: Mr R M Parsons

Date: June 2008

