Community Oncology Nursing Programme

Policies, Procedures and Resource Book

NCCP-COM-070-02 (Version 2)

TERMS AND CONDITIONS OF USE

This resource book is a reference manual for nurses who have undertaken the community oncology nursing programme. The information contained in the resource book is based on current evidence based practice and will be reviewed periodically or as new evidence emerges.

The medicines referred to in this resource book are those seen in common use in the community setting and is not a comprehensive list. The dose and scheduling should always be considered in line with the patient's treatment plan. Further information on individual medicines can be obtained from http://www.ema.europa.eu/ema/ http://www.hpra.ie/ or with the latest edition of the British National Formulary (www.bnf.org)

Contents

1 Resource Book Statement

The aim of this document is to ensure that a safe and seamless service to individuals with cancer is delivered by community nurses.

2 Purpose

The purpose of this document is to set out procedures and protocols for the delivery of community cancer nursing care.
The patients to whom this document applies to are:

- over 16 years of age
- have a malignant diagnosis
- are under the care of a Consultant Medical Oncologist/Haematologist

This document should be read in conjunction with local protocols and policies and relevant clinical guidelines. It aims to:

- Deliver best practice in caring for cancer patients in their home
- Promote seamless service delivery
- Adhere to legislative and regulatory requirements
- Ensure employees and line managers understand their roles and responsibilities
- Facilitate effective nurse education and training to ensure competency
- Act as an educational tool
- Act as a basis for audit and evaluation
- Support the integration of cancer care in keeping with the Health Service Executive (HSE) identified priorities

3 Scope

This document applies only to community nurses who have successfully completed the Nursing and Midwifery Board of Ireland (NMBI) National Cancer Control (NCCP) Community Oncology Nursing Programme.

4 Legislation/other related policies

This document must be read in conjunction with the following documents:

- An Bord Altranais, (2000) The Code of Professional Conduct for each Nurse and Midwife. An Bord Altranais, Dublin.
- An Bord Altranais, (2000) Scope of Nursing and Midwifery Practice Framework, An Bord Altranais, Dublin
- An Bord Altranais, (2002) Recording Clinical Practice Guidance to Nurses and Midwives. An Bord Altranais, Dublin.
- Strategy for the control of antimicrobal resistence in Ireland (SARI) Guidelines (2005) Guidelines for Hand Hygiene in Irish Health care settings. Health Protection Surveillance Centre, Dublin.
- An Bord Altranais, (2007) Guidance to Nurse and Midwives on Medication Management, An Bord Altranais, Dublin
- Strategy for the control of antimicrobal resistence in Ireland (SARI) Guidelines (2009) Prevention of Intravascular Catheter-related Infection in Ireland. Health Protection Surveillance Centre, Dublin
- Local relevant policies on:
  - administration of medication
  - management of adverse incidents within the community infection control
  - cytotoxic waste management

- National Cancer Control Programme (2012) A Strategy and Educational Framework for Nurses Caring for People with Cancer in Ireland. The Health Service Executive: Dublin
- National Cancer Forum (2006) A Strategy for Cancer Control in Ireland. The Stationary Office: Dublin.
- O Toole et al (2013) Evaluation of the Community Oncology Nursing Programme HSE Dublin
- Heckmann P et al (2014) NCCP Oncology Medication Safety Report HSE Dublin

5.0 Glossary of Terms and Definitions

5.1 'Adult' refers to individuals aged 16 years and above.

5.2 'Cancer' refers to the treatment of malignancy.

5.3 'Community nursing staff' or 'community nurse' is used to refer to the Public Health Nurses and Registered General Nurses working in the community including Community Intervention Team (CIT) nursing staff.

5.4 The 'treating cancer unit' is used to refer to the Oncology/Haematology unit where the patient receives their treatment for cancer.

5.5 Cytotoxic chemotherapy refers to drug treatment given with the intent to destroy cells within the human body. Within this document cytotoxic chemotherapy refers to substances administered orally or intravenously (via an ambulatory/infusional device).

5.6 Oral anticancer medicines will be referred to as OAMs in this document.

5.7 Ambulatory chemotherapy (literature also refers to it as infusional chemotherapy) is the continuous administration of a cytotoxic drug via a vacuum system through a Central Venous Access Device. Within this policy the term 'ambulatory' will be used to refer to this method of administration.

5.8 Central Venous Access Devices are used to administer intravenous fluids, including chemotherapy, intravenous antibiotics, blood products and Total Parenteral Nutrition and can be used for blood sampling. The use of this device avoids the need for repeated venepuncture, ensures reliable access for long-term intravenous therapy and reduces the risk of infiltration, extravasation and chemical phlebitis.

5.9 Central Venous Access Devices refers to Peripherally Inserted Central Catheters (PICCs), Implanted ports/Port-a-Caths™ and tunnelled central lines (Hickman lines™)

5.10 Monoclonal antibodies are medications administered to individuals with cancer to specifically 'target' the cancer. They are also referred to as 'targeted therapy' within the literature and can be administered via different routes. For the purpose of this resource book they are referred to as monoclonal antibodies (MABs).

5.11 Haemato/oncology emergencies are a range of complications often associated with cancer treatments, advanced cancer or certain types of cancer. Cancer emergencies are generally classified according to the system affected, such as cardiovascular, neurological, metabolic and haematological (Nevidjon & Sowers, 2000).

5.12 A medicinal product is any substance or combination of substances presented for preventing/treating disease in human beings (EEC directive of 2001[2001/83/EC] Cited by ABA 2007).

5.13 Medication Management is the facilitation of safe and effective use of prescription and over-the-counter medicinal products (An Bord Altranais, 2007).

5.14 Abbreviations:

5-FU	5-Fluorouracil
5HT3	5-hydroxytryptamine
ABA	An Bord Altranais
ADPHN	Assistant Director of Public Health Nursing
ANP	Advanced Nurse practitioner
CIT	Community Intervention team
CNM	Clinical Nurse Manager
CNS	Clinical Nurse Specialist
CRGN	Community Registered General Nurse
CVAD	Central Venous Access Device
DON	Director of Nursing
DPHN	Director of Public Health Nursing
DVT	Deep vein thrombosis
ED	Emergency Department
FBC	Full blood count
GCSF	Granulocyte Colony Stimulating Factor
GI	Gastrointestinal
GP	General Practitioner
GU	Genito-urinary
Haem/Onc	Haematology/Oncology
HSE	Health Service Executive
MABs	Monoclonal Antibodies
NaCl	Normal saline
NCCP	National Cancer Control Programme
NMBI	Nursing and Midwifery Board of Ireland
NUIG	National University of Ireland Galway
NQAI	National Qualifications Authority Ireland
OAMs	Oral anti cancer medicines
ONMSD	Office for Nursing and Midwifery Services Directorate
PE	Pulmonary embolism
PHN	Public Health Nurse
PICCs	Peripherally inserted central catheters
PPPG	Policies, procedures, protocols and guidelines
SARI	Strategy for the Control of Antimicrobial Resistance in Ireland
SmPc	Summary product characteristics
VEGF	Vascular Endothelial Growth Factor

6 Roles and Responsibilities

General Responsibilities

All HSE supervisory staff are responsible for ensuring that their staff work in accordance with up to date and relevant policies and procedures.

Consultant Medical Oncologist responsibilities

The Consultant Medical Oncologist/Haemotologist is responsible for:

- The care of their patient.
- Identification of patients suitable for community nursing interventions addressed within this document.
- Review of the patient should they become unwell and require evaluation in the treating cancer unit.

Nurse Management Responsibilities

- The Hospital Director of Nursing and Midwifery (DON) and the Director of Nursing for Public Health Nurses (DPHN) must ensure that nurses are aware of this Policy, Procedures and Community Oncology Nursing Programme Resource Book.
- The DON and DPHN must facilitate education and training of community and hospital staff to ensure the safe integrated care of patients.
- The DON and DPHN must ensure that relevant nurses adhere to this policy.

Hospital Nurses' Responsibilities

Hospital Nurses will:

- Ensure that an appropriate referral is sent to the community nurse and a copy is retained in the patient's hospital notes.
- Telephone the community nurse to discuss the referral and proposed interventions.

- Ensure that the patient is aware of the referral to the community nurse and is educated on their treatment regimes, expected side effects and the proposed interventions.
- Ensure that each patient has a completed drug summary reference sheet which details their drug regime and possible side effects.
- Document all communication with the community nurse in the patient's notes.
- Assist in facilitating review of the patient in the treating cancer unit (in consultation with the Consultant Medical Oncologist/Haematologist) should the patient be unwell and require evaluation.

Community nurses' responsibilities

The community nurses providing care to cancer patients will:

- Accept responsibility for the patients referred to them and ensure they understand the required intervention.
- Carry out a 'Head to Toe assessment' prior to any patient intervention as detailed in the resource book.
- Ensure that the patient has a clear understanding of the intervention. If additional information is required by the patient the community nurse is responsible for giving this information.
- Refer to the resource book in relation to specific interventions.
- Inform the Director of Public Health Nursing if an adverse incident occurs.
- The first point of contact for the community nurse is always the treating cancer unit and not the local GP.

The role of NUIG will include the following:

- Have a representative from the School of Nursing and Midwifery as a member of the Programme Design Team, Local Implementation Team, Pre-Exam Board and Exam Board.
- Validate the Programme as a NQAI Level 9 Minor Award
- Provide students with access to library facilitates and virtual learning environments (i.e. Blackboard)
- Provide Programme participants access to NUIG discussion Boards.

Responsibilities for Implementation and Evaluation

- The local implementation group is responsible for ensuring a safe and seamless service is delivered by community nurses.
- The NCCP, in association with the local implementation groups, is responsible for overseeing the implementation and evaluation process of the initiative.

7 Governance Structures

The governance structure for this community oncology programme is:

- NCCP Executive has ultimate responsibility for the community oncology nursing programme.
- NCCP Strategic Nursing Implementation Group advises the NCCP on the development and roll out of this initiative.
- Each local implementation group is responsible for the organisational elements at a local level which include
  - Service planning, integration between the community and hospital settings, overseeing safe implementation and evaluation.
  - Ensuring policies, protocols and processes are in place to support safe practice.

8 Acknowledgements

We would like to acknowledge the following for developing this work:

- The Office for Nursing and Midwifery Services Directorate
- The National Cancer Control Programmes Strategy Nursing Implementation Group
- The National University of Ireland Galway
- The Letterkenny County Donegal and Galway Local Implementation Groups
- Programme Curriculum Board
- Letterkenny and Galway centres for Nursing and Midwifery Education
- The HSE Quality Care and Clinical Directorate
- The Health Protection Surveillance Centre
- Nursing Midwifery Board of Ireland
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Date: September 2014 Community Oncology Division

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HSE/NCCP Policy, Procedures and Resource Book

I acknowledge the following:

- I have been provided with a copy of the Community Oncology Nursing Programme Resource book described above.
- I have read the Community Oncology Nursing Programme Resource Book

Name *Signature* *Date*

Print Name	Signature	Area of Work	Date

APPENDIX I

Strategy Implementation Group

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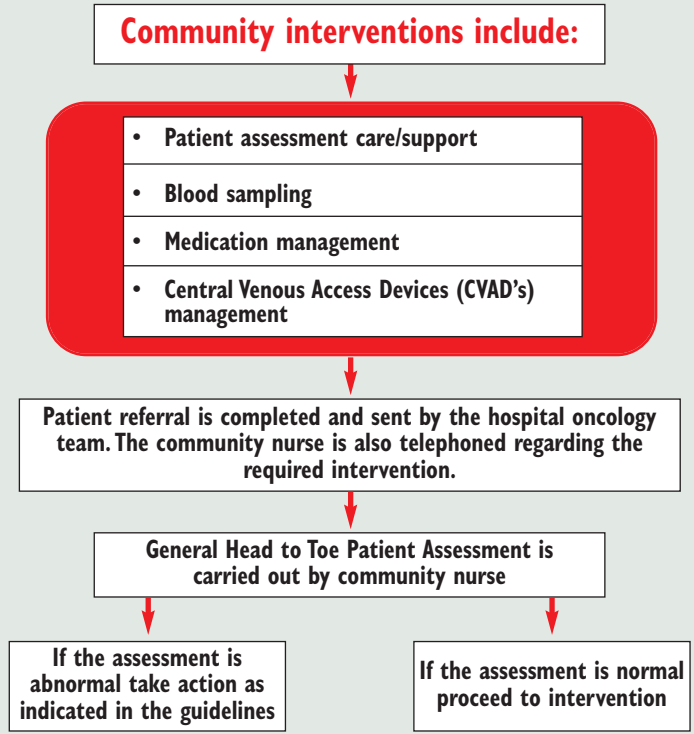
Resource Book

Patient Process Flow Sheet from the Oncology Department to the Community Oncology Nursing Service

The patient attends cancer treating unit for treatment
The Medical Oncologist/Haematologist indentifies patients suitable for community nursing interventions
The hospital oncology staff educate patients and explain the referral process to the patient



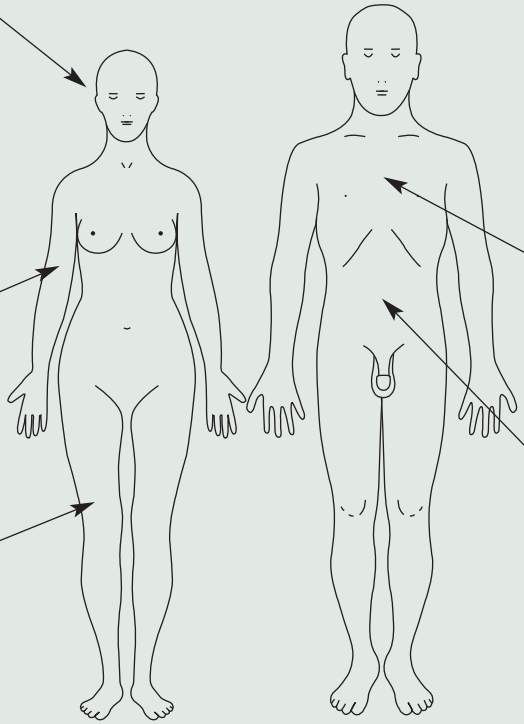
Guide to Head to Toe Patient Assessment

At the head assess:
- Oral mucosa/tongue
- Pupils
- Body Temperature

As you walk into the room carry out a generalised assessment
- Awake, alert, asleep
- Generalised tremor
- New oedema
- Wound care
- Skin colour
- Rash/bruising
- Generalised weakness

At the upper extremities assess:
- Peripheral Neuropathy
- Nail changes
- Hand grasps
- Hand reactions
- Muscle tone and strength
- Previous cannula sites
- Central venous access device site

At the lower extremities assess:
- Peripheral neuropathy
- Muscle tone and strength



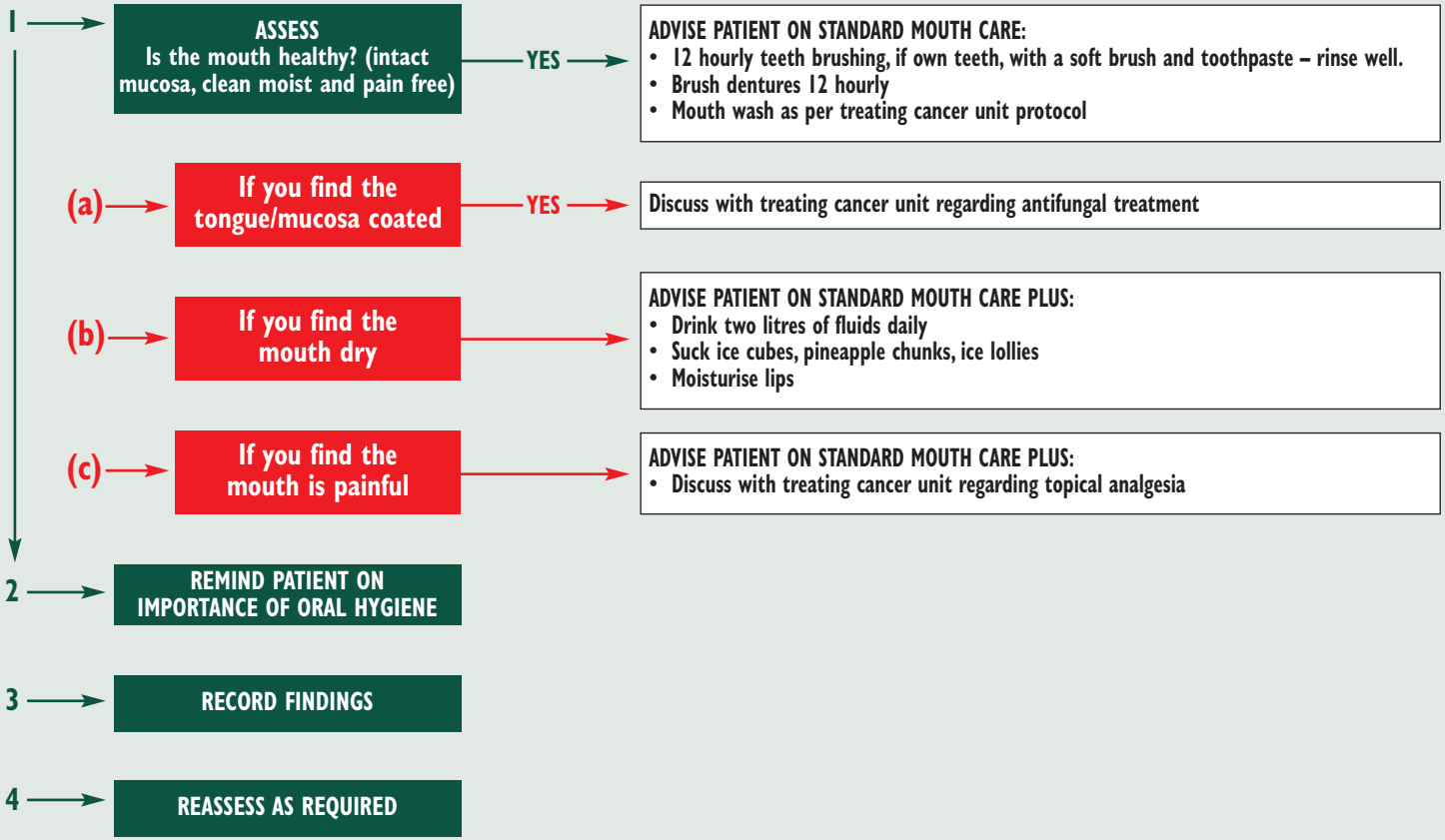
As you converse with the patent assess:
- Any new symptoms
- Orientation
- Sleep pattern
- Communication/speech
- State of relaxation, anxiety and distress
- Note ECOG status
- Pain; location, pain score 0-10, analgesia taken

At the chest/back assess
- Blood pressure
- Respiratory rate, depth, rhythm and effort
- Pulse Rate and Rhythm
- Dyspnoea
- Smoking
- Sputum
- Cough

At the abdomen assess:
- Nutritional intake
- Appetite
- Nausea/vomiting
- Bowel movements/diarrhoea, constipation, rectal bleeding
- Distention/ascites
- Continence
- Urinary symptoms

Figure 1.0

Flow Chart to Guide Oral Assessment and Care for Oncology Patients Receiving Care in the Community



General Assessment and Oncology Emergencies Reference Sheet

GOALS COMMUNITY NURSES MUST HAVE

When Caring for Patients in the Community who are Undergoing Active Treatment for Cancer

G GENERAL ASSESSMENT

Head to Toe Assessment

C CARDIOVASCULAR

A) Superior Vena Cava Obstruction (SVCO)

What to look out for:

- Swelling of neck and face
- Colour (Purple)
- Feeling of fullness in the head
- Prominent blood vessels in neck, trunk and arms
- Dyspnoea – worsens on lying flat

Immediate referral to treating cancer unit if one or more symptom

B) Pericardial Tamponade

What to look out for:

- Chest pressure or pain
- Shortness of breath
- Abdominal fullness
- Difficulty Swallowing

Immediate referral to treating cancer unit if one or more symptom

N NEUROLOGICAL

A) Spinal Cord Compression

What to look out for:

- Pain: back pain or nerve root pain with alteration in gait, and pain is aggravated by movement
- Weakness: motor weakness below level of lesion
- Sensory disturbance: from numbness and tingling to complete loss of sensation below level of lesion
- Incontinence: occurs as a late symptom

Immediate referral to treating cancer unit if one or more symptom

B) Brain Metastases

What to look out for:

- Seizures
- Headache
- Change in mood
- Confusion
- Lack of co-ordination
- Increased restlessness
- Agitation

Immediate referral to treating cancer unit if one or more symptom

M METABOLIC

A) Increased calcium (Hypercalcaemia)

What to look out for:

- Early non–specific symptoms lethargy malaise, anorexia
- Thirst, polyuria, dehydration
- Nausea, vomiting and constipation
- Confusion

Immediate referral to treating cancer unit if one or more symptom

B) Tumour Lysis Syndrome

What to look out for:

- Nausea
- Vomiting
- Anorexia
- Diarrhoea
- Muscle weakness, cramps, parasthesias
- Cardiac signs – asystole, tachycardia, syncope

Immediate referral to treating cancer unit if one or more symptom

H HAEMATOLOGY

A) Decreased Platelets with active bleeding

What to look out for:

- Bleeding in the skin, spontaneous nose bleeds
- Bleeding from the gums
- Blood in urine or stools
- Excessive bruising

Immediate referral to treating cancer unit if one or more symptom

B) Decreased Neutrophilis (Neutropenic sepsis)

What to look out for:

- Generally Unwell
- Fever/chill
- Pyrexia over 37.5°C/ less than 35.5°C
- Respirations >20
- Heart Rate >90

Immediate referral to treating cancer unit if one or more symptom

C) Disseminated Intravascular Coagulation (DIC)

What to look out for:

- Multiple bleeding sites
- Bruising of skin, mucous membranes
- Lack of blood supply to tissue (ischeamia)
- Sudden onset of high fever, severe malaise and extensive purpura of the extremities
- Petechiae, purpuric papules, blood filled blisters and bluish fingers and toes

Immediate referral to treating cancer unit if one or more symptom

The World Health Organisation Toxicity Grading System - A Guide for Community Nurses on Actions they should take

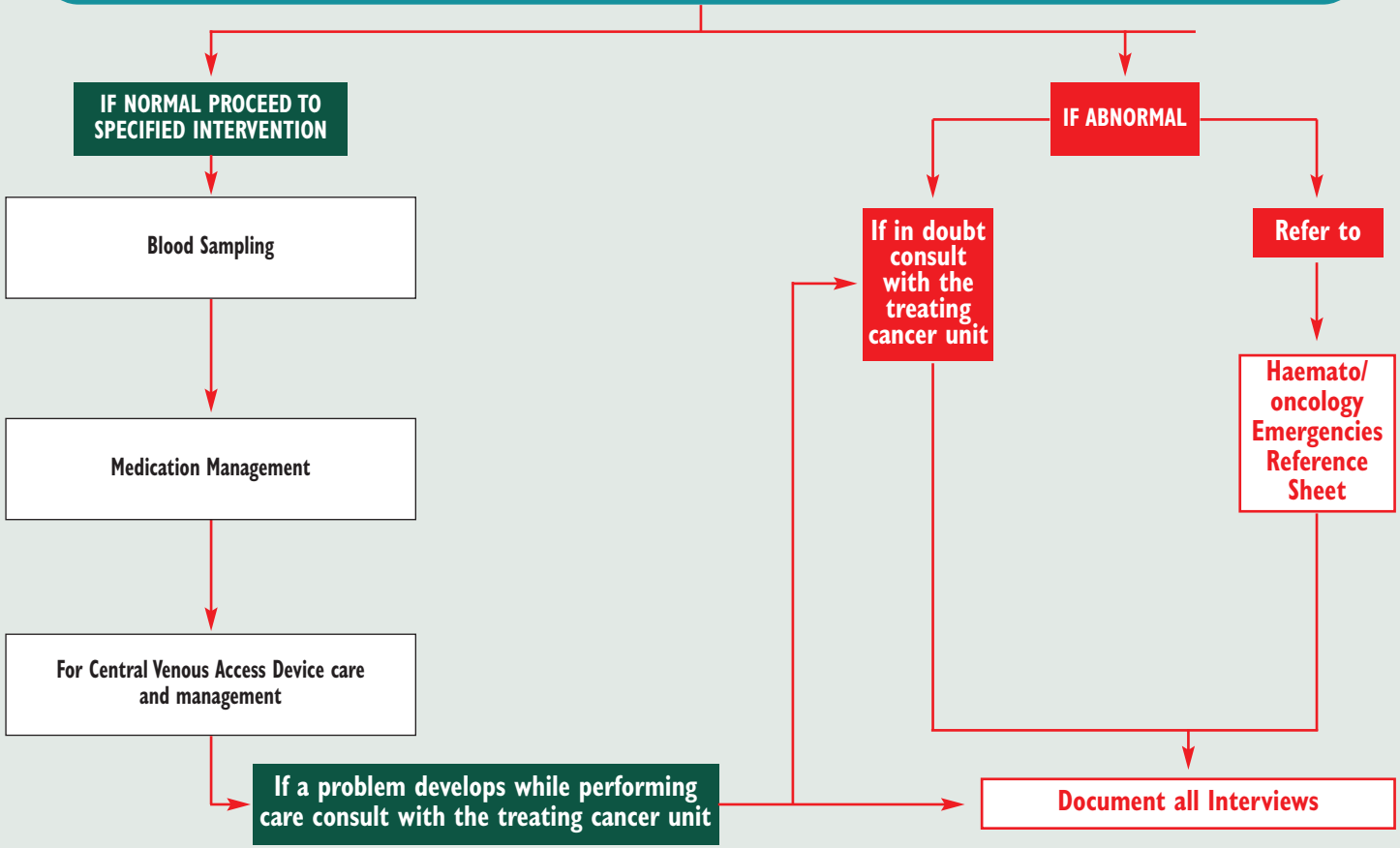
Grade 0 and 1: Manage in the community, **Grade 2:** Liaise with treating cancer unit, **Grade 3:** Coordinate urgent review by treating cancer unit.

World Health Organisation (WHO) Toxicity Grading Scale: The toxicity grading tool below has been devised by the WHO to assist nursing and medical staff when assessing patients toxicities to cancer treatments

Toxicity	Grade 0	Grade 1	Grade 2	Grade 3
Nausea/Vomiting	None	Nausea	Transient vomiting	Vomiting requiring therapy
Anorexia	Normal appetite	Normal appetite	Severe loss of appetite	
Alopecia	No change	*Minimal loss of hair	*Moderate patchy alopecia	*Complete alopecia but reversable
Cutaneous	No change	Erythema	Pruritis vesicles Dry desquamation	Moist desquamation
Stomatitis	No change	Soreness/erythema	Erythema ulcers Can eat soilds	Ulcers requires liquid diet only
Diarrhea	None	Transient < 2 days	Tolerable but> 2 days	Intolerable requiring therapy
Pulmonary	No change	Mild symptoms	Exertional dyspnoea	Dyspnoea at rest
Infection	None	Minor infection	Moderate infection	Major infection
Neurotoxicity/ consciousness	Alert	Transient lethargy	Somnolence < 50% waking hours	Somnolence < 50% waking hours
Peripheral	None	Paresthesia and or decreased tendon reflexes		

* = no review required

Head to Toe Patient Assessment



Referral for blood sampling of oncology patients to community nurses

Blood samples maybe obtained:

- peripherally, or
- via Central Venous Access Devices.

For peripheral blood sampling the four step approach below from the National Policy & Procedural Guideline for Nurses and Midwives undertaking venepuncture in Adults (2010) should be adhered to.

Four Step Approach To Clinical Assessment For Peripheral Venepuncture

1. Check/Assess

- indication for venepuncture to determine equipment and specific bottles to use
- if the patient has fasted as required for specific tests
- clinical condition (acute/chronic) of the patient
- location and length of the vein
- condition of the vein (visual and palpation)
- area is warm prior to the venepuncture procedure (veins constrict if cold, making the procedure more difficult)
- allergies to topical anaesthetic agents or plasters
- needle phobia
- previous history of difficult venepuncture procedures
- increased amounts of subcutaneous fat
- history of blood borne viruses, bleeding disorders or if receiving anticoagulation therapy

2. Choose
- most distal aspect of the vein
- non-dominant hand
- correct location, avoiding arteries and nerves
- appropriate equipment to undertake procedure
- appropriate topical anaesthetic agent if required
- veins clearly visible and accessible
- deep veins with rich blood supply
- easy to palpate
- well supported by subcutaneous tissue (prevents vein rolling under the needle)

3. Avoid
- hard, sclerosed, fibrosed, knotty, thrombosed veins or previous venepuncture sites
- valves in the vein (if visible or palpable)
- duplication of blood orders
- lower limb

4. Do Not Use
- arm with obvious infection or bruising
- arm with a fracture
- arm with an arteriovenous (AV) fistula
- arm affected by a cerebro vascular accident
- arm affected by lymphoedema or where axillary surgery has taken place, for example post breast surgery

List of Equipment Required for Carrying Out Blood Sampling Procedures

General Equipment

- A clean clinical tray
- Sharps container (large enough to accommodate the blood collection system).
- Disposable non sterile sheet (optional in case of blood spillage)
- *Personal Protective Equipment (e.g., one pair of well fitting non-sterile gloves and if required protective plastic apron, safety goggles/visor/mask with eye shield)
- Alcohol hand rub/gel
- Required blood collection set**
- Required blood specimen bottles**
- Blood requisition forms (fully completed with patient details)
- A biohazard bag for transport of specimens
- Gauze (to apply pressure and absorb blood spillages)

Peripheral

- Skin disinfectant -70% impregnated alcohol wipes or Chlorhexidine 2% in 70% alcohol
- Needle vacutainer system
- Tourniquet
- Topical anaesthetic agent if prescribed
- Sterile plaster/band aid*

CVAD

- Sterile gloves
- Adequate syringes
- For CVAD 2% Chlorhexidine only and allow drying for 30 seconds before accessing
- Blood transfer device

* As per standard precautions, the use of a plastic apron and/or face protection should be assessed by each health care worker based on the risk of blood splashing or spraying during the procedure

** Range and type of equipment may vary depending on local organisational policy

Blood Sampling via Central Line

- Explain procedure to patient
- Perform hand hygiene
- Gather and organise equipment
- Check tests required
- Open equipment and place on sterile field
- Perform hand hygiene
- Use aseptic non-touch technique throughout
- Clean end of needleless connector with chlorhexidine 2% in 70% alcohol
- Allow 30 seconds drying time
- Attach empty syringe to needleless connector and withdraw 2mls of blood and discard (note: if patient was in hospital and blood cultures were being reserved, there is no need to discard any blood).
- Attach empty syringe(s) to needleless connector and withdraw amount of blood required for tests
- When required blood has been withdrawn blood bottles can be filled by using a blood transfer device.
  - The use of a needle to transfer venous blood into a blood collection tube or culture bottle is both a prohibited practice and a dangerous procedure.
  - The BD Vacutainer™ Blood Transfer Device was designed with your safety in mind. This pre-assembled, latex-free, single-use, sterile device undeniably reduces the risk of transfer related injuries while maintaining specimen integrity.
- Immediately flush line with the required flushing solution using push/pause technique
- Remove contaminated gloves and perform hand hygiene
- Label blood bottles and complete blood requisition form and seal blood envelope
- Document care

Subcutaneous and Intramuscular Injection Reference Sheet

1. Granulocyte Colony Stimulating Factor (GCSF)

Usage Schedule	Side effects	Community Nursing Interventions	What happens if GCSF is not administered
Given to boost bone marrow production of white cells. **Long Acting** Lipegfilgrastim & Pegfilgrastim is given by subcutaneous injection 24 hours (once per cycle) after the last administration of cytotoxic chemotherapy. **Short Acting** Filgrastim/Lenograstim is given by subcutaneous injection commencing 48 hours after the last administration of cytotoxic chemotherapy (and given for a specified number of days at the same time each day).	Low grade pyrexia, fever chills and grafting pain. Pain is mainly localised to the sternum and lumbar spine. Localised infection is rare.	*Accurate assessment and recording of all side effects. Mild analgesia to alleviate pain may be advised. Some patients may require admission to control symptom if pain is severe. Liaise with treating cancer unit.	Patients are at an increased risk of developing an infection and may require hospitalisation.

* GCSF should not start less than 24hours post chemotherapy and in general not more than 72hours after commencement of chemo as indicated in the patients treatment plan

*The reason for giving GSCF within the prescribed time post administration of chemotherapy or at the same time each day is to prevent proliferation of white cells into the blood stream (white cell crisis) which can cause patients to feel weak /unwell and collapse

2. Hormone Injections

Usage Schedule	Side effects	Community Nursing Interventions	What happens if hormone injections are not administered
One of the treatments given to control and treat breast and prostate cancer. Administer every four weeks or every 12 weeks as prescribed.	Localised reaction. Hot flushes. Decreased bone density. Loss of libido. Nausea. Joint Pain. Erectile dysfunction. Gynaecomastia.	Accurate assessment and recording of all side effects.	Increased risk of recurrence.

3. Erythropoietin (EPO)

Usage Schedule	Side effects	Community Nursing Interventions	What happens if EPO is not administered
Given to stimulate the bone marrow to produce red blood cells.	Localised reaction to injection (rare) and more commonly flulike symptoms, headache and hypertension.	Accurate assessment and recording of all side effects. Blood pressure should be monitored at each visit to assess for hypertension.	Decrease in haemoglobin which may require blood transfusion.

4. Anticoagulant Subcutaneous Medications

Usage Schedule	Side effects	Community Nursing Interventions	What happens if Innohep is not administered
Used to prevent deep venous thrombosis or pulmonary emboli. Administer daily while the patient is on active treatment as prescribed (and thereafter as prescribed if patient is at a high risk of developing a clot).	Localised reaction and bruising to the injection site and systemic bruising.	Accurate assessment and recording of all side effects. If thrombocytopenia or active bleeding a concern, liaise with treating cancer unit.	Increased risk of clot formation.

5. Subcutaneous immunotherapy or Monoclonal antibodies (MABs)

Usage Schedule	Side effects	Community Nursing Interventions	What happens if MABS are not administered
Used to treat the disease by inducing, enhancing or suppressing an immune response.	Skin toxicity, including rash, dermatitis desquamation, hand foot syndrome reactions, dry skin, pruritis, urticaria, infection, hyperpigmentation, Telangiectasia and hair and nail disorders.	Accurate assessment and recording of all side effects.	Risk of recurrence of disease.

6. The Z-Track Technique:
Administering an injection using Z-Track Technique, follow this procedure.

1. After selecting the injection site, pull the skin 2 to 3 cms (1 inch) to the side of the injection site using the ulnar side of the non-dominant hand.
2. Hold the needle at a 90 degree angle to the skin.
3. Introduce the needle and administer the medication.
4. Keep the skin taut until the needle is completely withdrawn.
5. Release the skin.

This has the effect of breaking the needle track or sealing off the puncture tract as the skin and subcutaneous layers move back over the muscle. The drug is therefore locked within the muscle. Under some circumstances, such as for an emaciated patient the muscle may be pinched instead of pulling to one side.

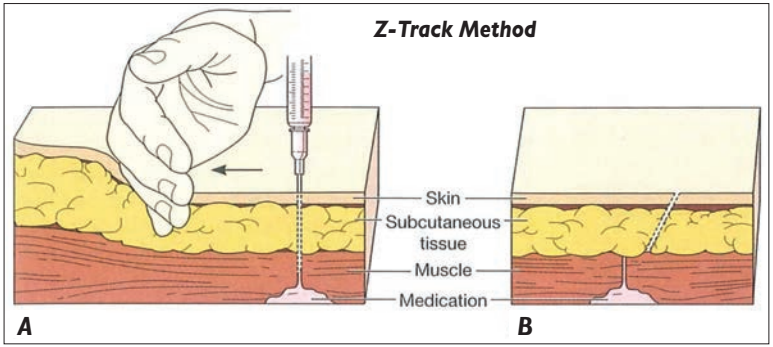


Figure 2.0
Inserting an intramuscular needle at a 90 degree angle using the Z-Track method:
A - skin pulled to the side. **B** - skin released.
Note: when the skin returns to its normal position after the needle is withdrawn, a seal is formed over the intramuscular site. This prevents seepage of the medication into the subcutaneous tissues and subsequent discomfort.

Figure 2.0

7. Specific guidelines for subcutaneous injections

Sites:

1. Posterior aspects of the upper arms.
2. The abdomen from below the costal margins to the iliac crests one inch from the umbilicus.
3. Anterior aspects of the thighs.
4. Scapular areas of the upper back.

Advantages:

- These sites are large enough so that multiple injections may be rotated within each anatomical location.

Points to consider:

- Injection sites should be free from infection, skin lesions, scars, bony prominences, pitting or lumping and large underlying muscles or nerves.

- Gender, Body Mass Index, Injection type and site must be considered when giving subcutaneous injections.

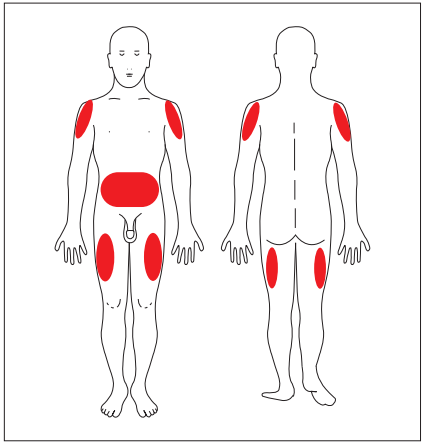


Figure 3.0

7. Specific Guidelines for Intramuscular Injection Sites

A. The Deltoid Site (Figure 4.0):

This site has the advantage of being easily accessible whether the patient is standing, sitting or lying down.

The Deltoid Muscle – Upper, lateral aspect of the arm.

Landmarks:

1. Identify the acromion process
2. Insert the needle about 5cms (2inches) or 2 finger widths below the acromion process at a 90 degree angle.

Advantages:

Used for vaccinations with small volume only (not for routine use – muscle is small).

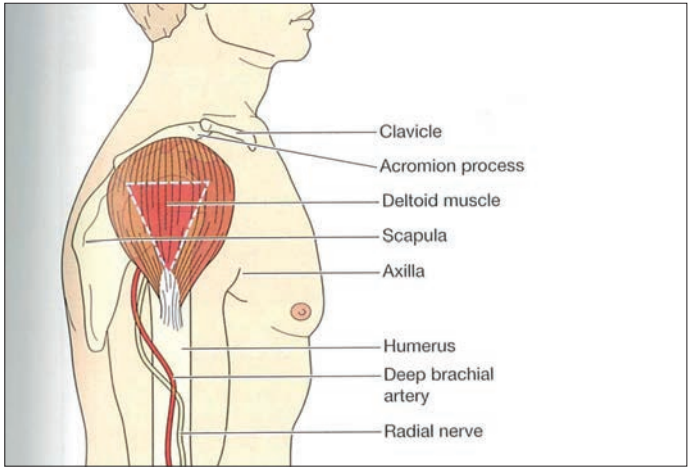


Figure 4.0 Deltoid Site

B. Dorsogluteal Site (Figure 5.0): This site is commonly referred to as the upper outer quadrant of the buttocks.

The dorsogluteal site is used for deep intramuscular injections. The gluteal muscle has the lowest drug absorption rate. The muscle mass is also likely to have atrophied in older people, nonambulant and emaciated patients. This site carries with it the danger of the needle hitting the sciatic nerve and the superior gluteal arteries.

Landmarks:

1. Palpate the posterior superior iliac spine, and the greater trochanter of femur.
2. Draw an imaginary line between the two landmarks.
3. The injection site is 2.5cm laterally and superiorly to the midpoint of an imaginary line joining these points. **(Different methods may be used to locate the safe site)**
4. Dividing the buttocks in quadrants and injecting using the upper outer quadrant. Location- vertical line extending from the iliac crest to the gluteal fold and the intersecting horizontal line extending from the medial fold to the lateral aspects of the buttocks.

Disadvantages:

- Associated with significant complication e.g. nerve damage, abscesses, pain.
- Close to sciatic nerve, gluteal nerve and artery
- Poor absorption; too much fatty tissue.

Patient Position:

- Side lying position upper knee flexed and in front of the lower leg.

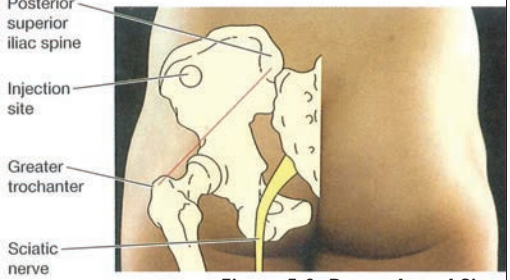


Figure 5.0. Dorsogluteal Site

C. Vastus-lateralis Muscle (Figure 6.0) - Anterior lateral aspect of the thigh, midway between the hip and the knee.

Landmarks:

1. Find greater trochanter of femur and lateral femoral condyle of the knee.
2. Divide in three parts.
3. Insert needle into the **middle third** on the anterior lateral aspect of the thigh.

Advantages:

- No major blood vessels.
- Even layer of fat.
- High rate of absorption.
- Preferred self medication administration site.

Patient Position:

- Back-lying or sitting.

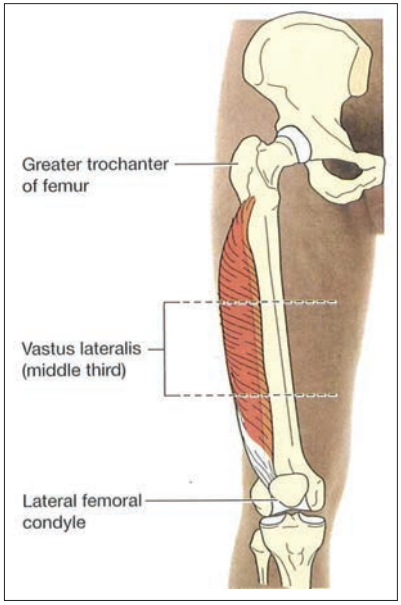


Figure 6.0 Vastus-lateralis Muscle

D. The Ventrogluteal Site

Figure 7.0 - Administering an intramusclar injection using the ventrogluteal site.

Landmarks:

An inverted triangle formed by the iliac crest, anterior superior iliac spine and the greater trochanter of the femur.

Easiest Approach:

1. Place the heel of the opposing hand on the greater trochanter, your wrist will be in line with the person's thigh, fingers pointing towards the patient's head and your thumb pointed at the groin.
2. Extend the index finger towards the patient's anterior superior iliac spine.
3. Extend the middle (third) finger dorsally (towards the patient's back).
4. The triangle formed by the index finger, the middle finger and the crest of the ilium is the injection site.

Figure 7.0 Ventrogluteal Site

Advantages:

- Preferred site (greatest thickness of muscle), consists of both medius and minimus gluteal muscle.
- Free of large penetrating nerves, veins or arteries.
- Minimal complications.

Patient Position:

Back, prone or side lying. The side position with the knee bent and raised to the chest helps to locate the site more easily.

(All pictures from Custom Medical Stock Photo, Inc., in Berman et al, 2008).

THREE TYPES OF CVAD USED WHEN TREATING ONCOLOGY PATIENTS:

- Hickman Lines™
- Implanted Ports (Port-a-caths)™
- Peripherally Inserted Central Catheters (PICCs)

Figure 8.0 Hickman Line ™

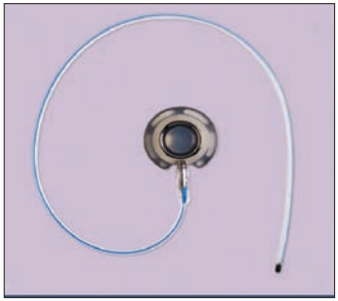


Figure 8.1 Implanted Ports

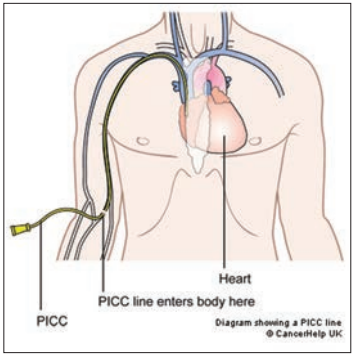


Figure 8.2
Peripherally Inserted Central Catheters

1. Hickman Lines™

A Hickman Line™ is a tunnelled central line that terminates at or close to the heart or in one of the great vessels which is used for infusion, withdrawal of blood or haemodynamic monitoring.

How is it inserted?

A general or local anaesthetic is given to the patient at time of insertion. The proximal end of the catheter exits via a tunnel from the lower anterior chest wall (or very rarely from a lower limb) remote from the point of entry to the vein. The inserting clinician verifies that the line is in position. The line can stay in for as long as the line is required. The Hickman Line™ can have 1, 2, 3 or 4 lumens. Each lumen hub is a different colour.

Figure 9.0

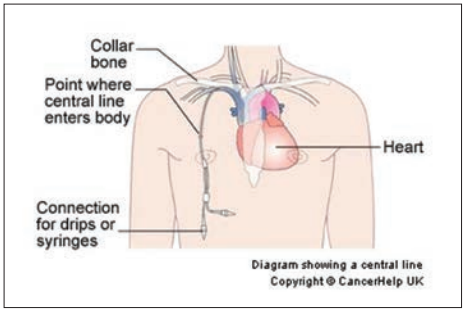


Figure 9.1

2. Implanted Ports (Port-A-Cath)™

An Implanted Port (Port-a-cath)™ is a catheter with a disc-like attachment. The tip of the catheter is placed into the superior vena cava and the disc-like attachment (port) is implanted under the skin of the upper chest or in the upper arm. The port resembles a small pacemaker in size or a €2 coin.

How is it inserted?

It is usually inserted in the x-ray department under local anaesthetic and sedation. The catheter is tunnelled under the skin to the neck area and the tip is placed in the superior vena cava. The catheter is then attached to the port which is implanted under the skin. The inserting clinician verifies the line is in the correct position.

To access the port, a specific needle is inserted into the chamber or reservoir of the port. These special needles are the only needles that can be used to access this device.

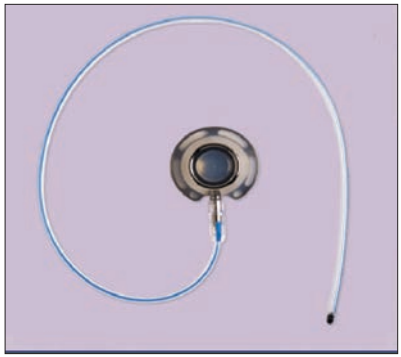


Figure 10.0 Implanted Ports ™

3 Peripherally Inserted Central Catheter (PICC)

A PICC is a catheter that is inserted into the basilic or cephalic vein with the tip placed in superior vena cava. This catheter can be left in situ for as long as treatment is required provided the line remains patent.

How is it inserted?

The PICC catheter is inserted in the outpatient department or ward using local anaesthetic. The catheter is secured with a transparent dressing and an x-ray is taken to confirm it is in the correct position.

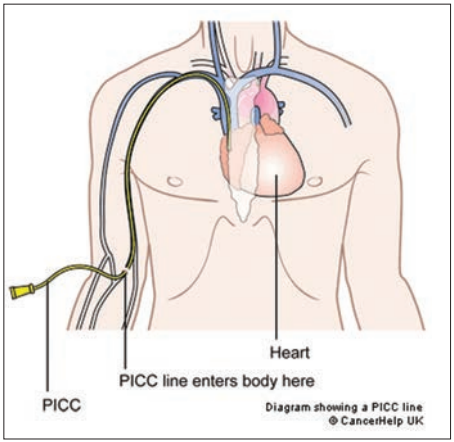


Figure 11.0 PICC Catheter

SPECIFIC TRAINING IS REQUIRED FOR DRESSING AND FLUSHING TECHNIQUES OF ALL LINES REFER TO YOUR LOCAL POLICY

Central Venous Access Devices Flushing and Locking Interventions

Adapted from the British Columbia Cancer Agency

1. **Always use 10ml syringe for flushing**
2. **Push/Pause technique should always be used to flush and instill the last 1ml of flushing solution, at the same time clamp (if present) is closed**
3. **Always check each lumen for blood flow prior to flushing and discard 2/3mls of blood obtained**

Vascular Access Device	Flushing Solution	Lock Solution* Lock if required as per local policy	Frequency
Hickman Line™	10mls 0.9% Sodium Chloride Push-pause technique	Heparinised Saline (if required by local policy) 10iu/ml 1-2 mls Push-pause technique	After each access or once a week if not in use
PICC (Valved)	Flush & Lock with 10mls 0.9% Sodium Chloride Push-pause technique		After each access or once a week if not in use
PICC Line (Nonvalved)	10mls 0.9% Sodium Chloride Push-pause technique	Heparinised Saline (if required by local policy) 10iu/ml 1-2 mls Push-pause technique	After each access or once a week if not in use
Implanted Ports (Port-a-Cath)™ (Nonvalved)	Flush and lock with 10mls 0.9% Sodium Chloride Push,-pause technique	** Heparinised Saline (if required by local policy) 100iu/ml 3-4 mls Push-pause technique	After each access or once a month if not in use Once treatment is completed every 3 months for maintenance
Implanted Ports (Port-a-Cath)™ (Valved)	Flush and lock with 10mls 0.9% Sodium Chloride Push-pause technique		After each access or once a month if not in use Once treatment is completed every 3 months for maintenance or as per local policy

** not licensed for community use therefore use 10iu/ml 3-4mls lock solution

Trouble Shooting Guide to Central Venous Access Devices

	PROBLEM	SIGNS AND SYMPTOMS	ACTION REQUIRED BY COMMUNITY NURSE
1	Bleeding at the site.	May occur within 48 hours of insertion.	Apply a pressure bandage.

	PROBLEM	SIGNS AND SYMPTOMS	ACTION REQUIRED BY COMMUNITY NURSE
2	Pyrexia.	Pain/redness at exit site. Exudate at site and/or pyrexia. Systemic Infection. Shivering following flushing of catheter. Generally feeling unwell.	Refer back to treating cancer unit to obtain an antibiotic prescription. Must receive immediate medical attention.

	PROBLEM	SIGNS AND SYMPTOMS	ACTION REQUIRED BY COMMUNITY NURSE
3	Post placement mechanical phlebitis. (more common in PICC lines)	Localised pain. Localised swelling. Palpable venous cord.	Ensure firm fixation of the dressing. Advise patient to apply indirect heat pack (wrapped in a towel) for 20 minutes, 4 times a day for the first week. Post placement regardless of presence or absence of phlebitis may require a non steroidal anti-inflammatory if appropriate and prescribed.

	PROBLEM	SIGNS AND SYMPTOMS	ACTION REQUIRED BY COMMUNITY NURSE
4	Occlusion. The catheter can become completely or partially occluded by thrombosis or precipitate formation. Causes of occlusion include Fibrin sheath formation, Blood reflux, Improper flushing technique or the catheter tip being pressed against the vein.	No venous return, inability to flush.	1. If blood cannot be withdrawn encourage patient to do exercises (neck turning, coughing, flip/rotate arm). 2. If blood still cannot be withdrawn repeat number 1 above and use a 20ml syringe to try and withdraw blood 3. If blood still cannot be withdrawn, using a 10ml syringe, flush with 2-5ml NaCl 0.9% provided no resistance is felt. - If resistance felt stop and refer to treating cancer unit. - If no resistance disconnect syringe and repeat number 1 above. 4 If blood still cannot be withdrawn, using a 10ml syringe, flush with 2-5ml NaCl 0.9% provided no resistance is felt. - If resistance felt stop and refer to treating cancer unit. - If no resistance do not disconnect syringe but instead try to withdraw blood immediately into the syringe with normal saline in it. 5. If line is blocked refer back to Treating cancer unit

	PROBLEM	SIGNS AND SYMPTOMS	ACTION REQUIRED BY COMMUNITY NURSE
5	Thrombosis Deep vein thrombosis is a recognised complication of central catheters. Causes of thrombosis Injury to the vein by the catheter, by drugs, patient's disease or a fibrin sheath.	Erythema of the skin Oedema of the affected arm, discomfort, pyrexia. Pain radiating down the arm/chest wall, facial swelling, neck swelling/discomfort. Neck vein distension. Catheter occlusion.	Refer to treating cancer unit.

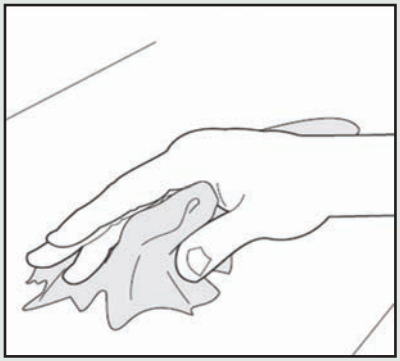
	PROBLEM	SIGNS AND SYMPTOMS	ACTION REQUIRED BY COMMUNITY NURSE
6	Migration. (more common in PICC lines)	Can be seen as lengthening or shortening of the catheter.	Refer to treating cancer unit.

	PROBLEM	SIGNS AND SYMPTOMS	ACTION REQUIRED BY COMMUNITY NURSE
7	Fracture pinholes, leaks, and tears can appear in the catheter due to accidental damage, puncture, excessive leur lock syringe pressure or poor catheter wear. (can lead to air embolism)	External fracture is evidenced by obvious fracture on inspection or flushing of the catheter, leakage of bloods or fluids around the site or the actual catheter and signs/symptoms of air embolism. Internal fracture is evidenced by pain, redness/swelling on flushing or administration of fluids, partial withdrawal occlusion and signs/symptoms of air embolism.	Refer to treating cancer unit. If line is fractured ,clamp externally above the fracture site then apply an adhesive dressing and refer to the treating cancer unit

Quick Reference Guide/Aide Memoir to Disconnecting an Infuser from a Central Venous Access Device (CVAD)

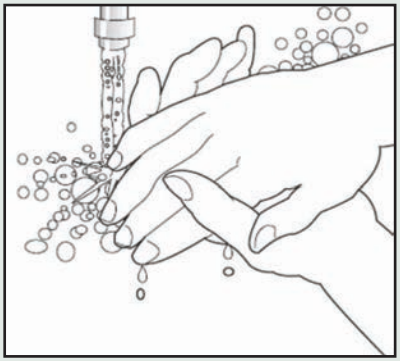
Adapted from the British Columbia Cancer Agency

1



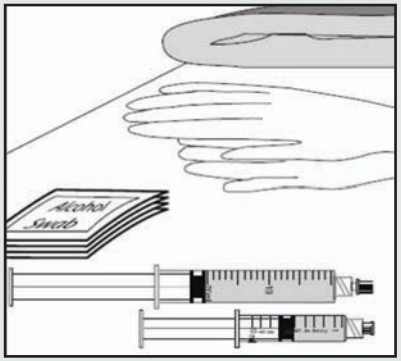
Clean working surface with detergent wipe.

2



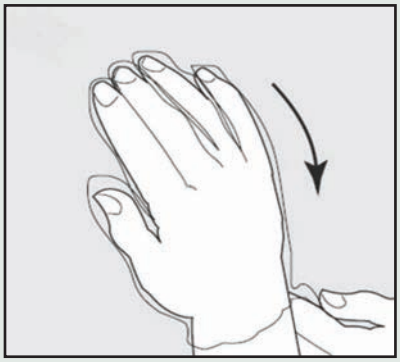
Perform hand hygiene.

3



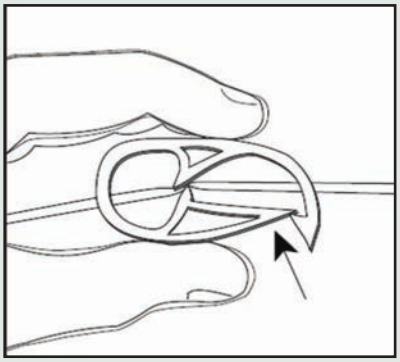
Gather equipment. Place on clean working surface.

4



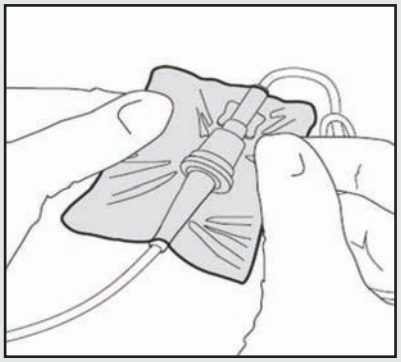
Put on double gloves, apron & goggles
Explain procedure to the patient and ensure they are in the appropriate position.

5



Close the clamp around the tubing that is closest to the needle or exit site (if applicable). Close clamp on IV giving set.

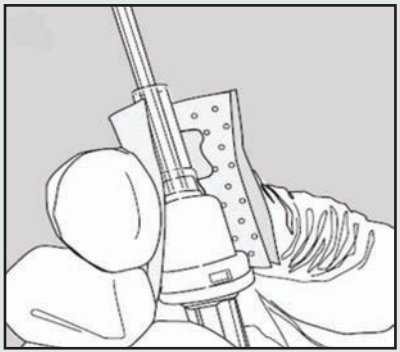
6



Remove the tape that holds the sensor against skin.

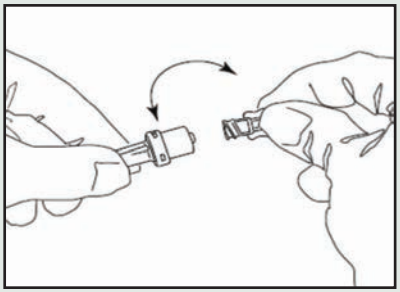
Quick Reference Guide/Aide Memoir to Discontinuing an Infuser from a Central Venous Access Device (CVAD)

7



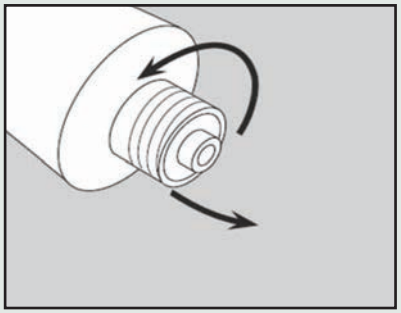
Clean around the connection between the giving set and line thoroughly with 70% alcohol or 2% chlorohexidine in 70% alcohol when /if available*.

8



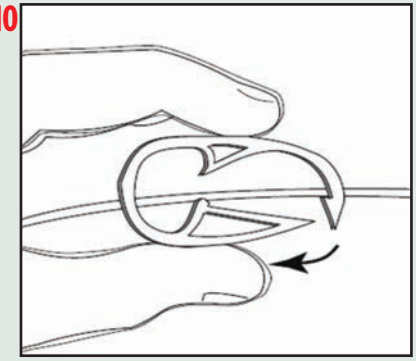
Disconnect the giving set using non touch technique. Discard gloves, apron and remove goggles immediately cytotoxic waste bin.

9



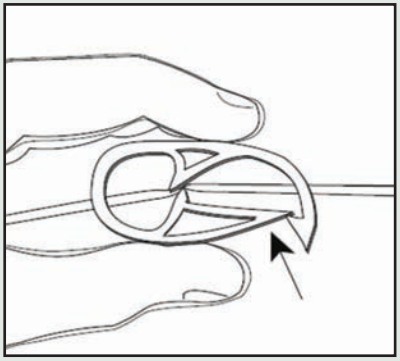
Perform hand hygiene and put on sterile gloves using prepared flushing solutions flush line as per policy.

10



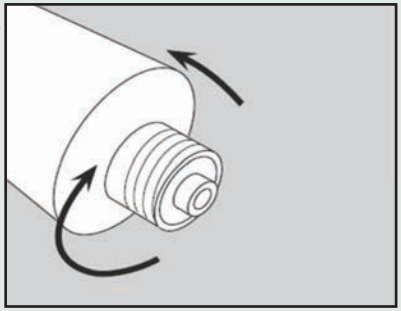
Open clamp (if relevant) while you start to push the flushing solution.

11



Flush the line with flushing solution as per policy. If clamp in situ, clamp the line when the syringe has 1ml of flushing solution left.

12

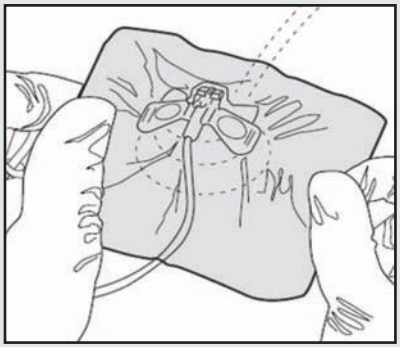


Remove syringe by twisting syringe counter clockwise and place in cytotoxic waste bin.

*When using chlorohexidine allow 30 seconds drying time before you attach the syringe.

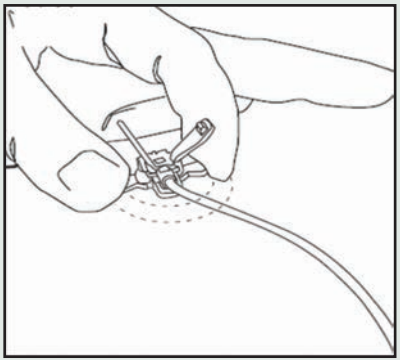
Quick Reference Guide/Aide Memoir to Discontinuing an Infuser from a Central Venous Access Device (CVAD)

13



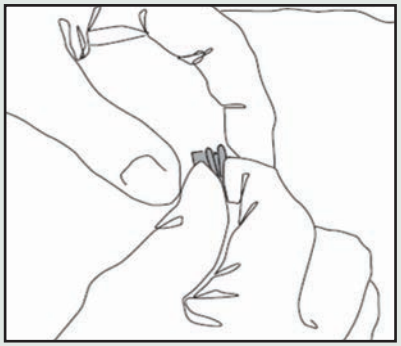
If implanted port (port-a-cath) in situ, stabilise the CVAD with your non- dominant hand. Remove the dressing and discard.

14



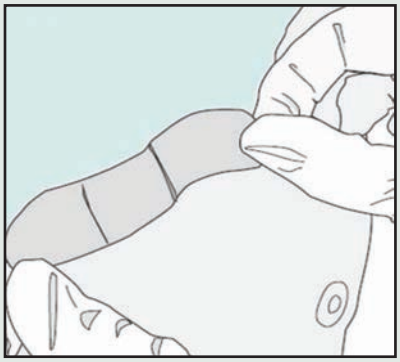
If implanted port (port-a-cath) in situ, Stabilise the CVAD with your non- dominant hand.

15



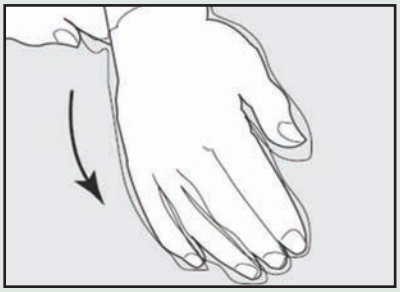
Using moderate force, pull needle straight up and out of CVAD. Place needle in cytotoxic waste bin. (The needleless system will be automatically activated and needle will be consealed within)

16



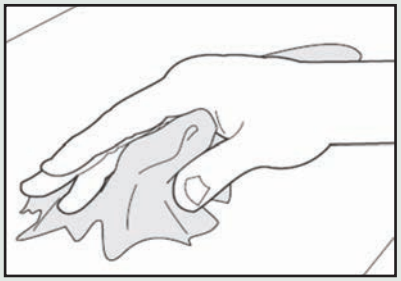
Put a dry dressing over the needle site. For all CVADS lines take off gloves and perform hand hygiene.

17



For all CVADS lines take off gloves and perform hand hygiene.

18



For all lines clean working surface.

FOR ALL CVADS LINES:
- Close cytotoxic waste container and sign container.
- Document care

Recommendation to avoid exposure via absorption:

Always wear personal protective clothing for disposal of cytotoxic chemotherapy. This includes:

- Waterproof apron.
- PVC gloves (or double glove using latex/non-latex gloves).
- Perform hand hygiene before putting on gloves and after removing gloves (as per local hand hygiene policy).
- If spillage of chemotherapy occurs and contaminates gloves these must be changed immediately. Hands must be washed (as per local hand hygiene policy) after dealing with cytotoxic spillage.
- Gloves must also be removed if they become torn or punctured and hands washed (as per local hand hygiene policy).
- In the event of skin contact with drug solution, wash skin immediately with soap and water and document in the incident/near miss form as per local procedures. Seek medical attention through occupational health and GP.
- In the event of eye contact, flush eye with Normal Saline 0.9% and seek medical attention. Document in the incident/near miss as per local procedures. Seek medical attention through occupational health and GP.

Recommendation to avoid exposure via ingestion:

- Decontaminate hands before and after the preparation of administration of cytotoxic drugs (as per local hand hygiene policy).
- Avoid hand to eye or hand to mouth contact when handling cytotoxic drugs.
- Always decontaminate hands while at work before consuming food or drink at meal breaks (as per local hand hygiene policy).
- Clean up all spillages as indicated in the guideline.

Procedures for management of cytotoxic spillage

- Spillage or splash of cytotoxic waste is most common with IV infusion or bolus injections. Vacuum devices used to administer ambulatory chemotherapy are highly unlikely to cause spillages as vacuum pressure is removed when the infusion tubing is removed from the CVAD.
- Spillage of cytotoxic waste onto skin (patient, carer, health professional), clothes or surfaces is a serious event and must be reported as an incident.
- If a spillage of cytotoxic chemotherapy occurs while the patient is with the community nurse, the attending nurse must deal with it immediately.
- Remove unaffected persons away from area and prevent others from entering area the area is cleaned.

Protect self first by putting on protective clothing, to include:

- Double plastic apron.
- Double glove.
- Goggles.
- Plastic bags taped onto feet (if spillage on floor or likely to drip onto floor).
- If powder spillage put on Mask.
- Collect spillage kit (should be with the patient). Take out all contents of spillage kit.

Procedure

- Lay absorbent pad over fluid and this will absorb liquid. If dry powder spillage, use dampened paper towels.
- Start at outer edge of fluid and work in a circle motion towards the centre.
- Place contaminated waste in cytotoxic bin.
- Wash hard area with soap and copious amounts of water (as per local cleaning and disinfecting policy) and dry. If spillage is from body fluids contaminated by cytotoxic drugs, then use hypochlorite solution (as per local cleaning and disinfecting policy) and dry.
- Cover contaminated floor area with uncontaminated absorbent pads and keep all persons away from area until drying.
- If spillage occurs in community health facility contact domestic services locally for cleaning as per their cleaning policy (advise them of cytotoxic spillage).

To deal with contaminated clothing/linen:

- If spillage is on clothing, remove as soon as possible.

To deal with spillage onto skin:

- Contamination of the skin, mucous membranes and eyes must be treated promptly.
- Wash contaminated skin area with copious amounts of luke-warm water (for at least 2 minutes), ensuring that all water is allowed to run off skin immediately.
- For contamination of the mucus membranes or eyes, copious amount of cold tap water or 0.9% Normal Saline must be used to wash the area, (for at least 2 minutes), ensuring that all water/normal saline be allowed to run off skin immediately.
- Any incident or spillage involving direct skin by a cytotoxic drug must be reported adhere to the HSE Incident Management Policy and Procedure.
- Documentation of all spillages must be forwarded to Occupational Health and Risk Manager.
- If a spillage occurs onto patient's skin/eyes, they must return for assessment to the treating cancer unit for assessment. If spillage occurs onto staffs' skin/eyes, a medical doctor must review them.

Procedures for management body fluids from patients receiving cytotoxic agents.

- There are few cytotoxic agents that are excreted as the unchanged drug or as the active metabolites in body fluids. Normal procedures and standard precautions must be adhered to taking care to avoid splashes onto skin, clothing or equipment.
- As per the administration of cytotoxic drug policy patients are advised to adhere to good personal hygiene (especially hand washing) and to clean up any spillages of body fluids immediately.
- All patients receiving cytotoxic chemotherapy are provided with advice on their side effects.

Management of excreta (faeces/urine):

- The seated area of the toilet and arms (or commode if relevant) must be washed with soap and disinfectant (only if contaminated), hand hygiene as per local national guidelines.
- For patients voiding urine/faeces post administration of cytotoxic drugs flushing of the toilet is recommended (up to 72 hours post administration) with the toilet lid closed.
- Dispose of gloves/aprons in cytotoxic bin and perform hand hygiene according to Local Infection Control Policy.

Management of vomitus:

- Dispose of gloves/aprons in cytotoxic sharps bin and perform hand hygiene according to Infection Control Policy.

Management of sputum, sweat or other body fluids:

- If changing bedclothes due to excessive sweating wear plastic apron and gloves and wash linen as per guideline above.
- Dispose of gloves/aprons in cytotoxic sharps bin and perform hand hygiene according to local Infection Control Policy.
- Document in patient's notes.

Feidhmeannacht na Seirbhise Sláinte
Health Service Executive West

National Cancer Control Programme

What you need to know about the Safe Disposal of Empty 5-Fluorouracil Infusion Pumps

You have been provided with a sharps container for the disposal of empty 5-FU pump, needles/sharps equipment.

When your infusion is completed, a community nurse will disconnect the infusion pump, place it in the sharps container and close it securely and sign the box.

To avoid risk and contamination to yourself and others please ensure that the sharps container:

- Is stored in a safe place e.g. in a locked cupboard.
- Is kept away from foodstuffs.
- Is returned to your Oncology Day Ward at your next visit.
- Is transported in an upright position.
- Is not held against your body ensuring it is carried upright by the handle, it should not be shaken.

If you have any queries in relation to your cytotoxic medication (5-FU) please discuss with your Community or Hospice Nurse

Management of Oral Anti-Cancer Medications

Usage schedule:	Side effects:	Community Nursing Interventions:	What happens if OAM is not taken as prescribed?
Oral medication given for treatment of malignancy Can be continuous or cyclical Can be for an undefined period or can be for specific period of time (i.e., have end point) Can be cytotoxic or can be non-cytotoxic Patients should be capable of self administration/ management of medication	Nausea and vomiting Diarrhoea and constipation Skin problems/ reactions Hand-foot syndrome Mucositis Body weakness/ fatigue Only common side effects are listed the products summary of product characteristics (SmPC) should be consulted for a comprehensive list	Clarify type of OAM Clarify patient's understanding of OAM Check dose, route and frequency of OAM are being adhered to If medication is cyclical i.e. (there is a stoppage in treatment required between cycles) ensure the patient is fully aware of the need to stop OAM on the required date Check the patient is aware of what to do if a dose is missed Check patient is aware of the requirement to take with food, on an empty stomach etc in general medication should be swallowed whole Tablets must not be crushed, dissolved, chewed or capsules/tablets opened as per manufacturer's recommendations to avoid risk of inhalation of the drug. Patients should be reminded when taking cytotoxic OAM to use non-touch technique for administration Assess patient's understanding of effects and side effects of OAM Perform head-to-toe assessment specifically assessing for presence of side effects of OAMs Check storage of OAM in the home (i.e. in medication box in safe place) Ensure patient has contact details for treating cancer unit should concerns/problems arise when on OAM.	If the patient has missed a dose, over-dosed or is non-adherent to the OAM, liase with treating cancer unit.

Drugs for Treatment of Bone Diseases (Denosumab)

Denosumab injection is available in two formats

- 120mg (Xgeva®) is used for the prevention of skeletal related events including pathological fractures, radiation to bone, spinal cord compression or surgery to bone, in adults with bone metastases from solid tumours.
- 60mg (Prolia®) is used for the treatment of bone loss associated with hormone ablation in men with prostate cancer at increased risk of fractures. Prolia® may also be used in women with breast cancer who are receiving certain cancer treatments that increase their risk for fractures (this is an unlicensed indication of this medicine).

The needle cover of the pre-filled syringe contains dry natural rubber (a derivative of latex), which may cause allergic reactions.

Usage schedule:	Side effects:
Xgeva® 120mg is administered as a single subcutaneous injection once every 4 weeks into the thigh, abdomen or upper arm. Prolia® 60mg is administered as a single subcutaneous injection once every 6 months into the thigh, abdomen or upper arm. Individuals receiving these treatments should be prescribed supplements of calcium and vitamin D (provided there are no contraindications) during treatment with denosumab injection.	Arm or leg pain, back pain, muscle or joint pain, pain, tingling or numbness that moves down the leg (sciatica) Skin infections (mainly cellulitis), rash, redness and/or dryness (eczema), oozing or crusty blisters on skin, peeling skin Nausea, diarrhoea Headache Painful urination, frequent urination, blood in the urine, inability to hold urine Hypocalcaemia Osteonecrosis of the Jaw Atypical fractures of the femur Infections, upper respiratory tract infection, runny nose, sore throat Cloudy area in the lens of the eye (cataracts) Constipation, abdominal discomfort. *Only common side effects are listed.The product's Summary of Product Characteristics (SmPC) should be consulted for a comprehensive list .*

Drugs for Treatment of Bone Diseases (Denosumab)

Community Nursing Interventions:	Side effects:	What happens if denosumab is not administered as prescribed?
Ensure that a recent (i.e. within last 7 days) serum calcium level has been obtained. If level is low then denosumab should not be administered to avoid hypocalcaemia. Always advise patients to talk to their doctor and dentist before having any dental treatments while they are receiving this medication as denosumab may cause serious problems with the jaw, especially if patients have dental surgery or treatment while being treated with denosumab injection. Check that the patient is maintaining good oral hygiene when being on treatment with denosumab Ensure patient has contact details for treating cancer unit should concerns/problems arise when on this medication.	Check allergy history. Denosumab is not recommended in pregnancy. Patients who are pregnant or breastfeeding should consult with their doctor. Clarify frequency of denosumab. Clarify patient's understanding of medication. Check dose, route and frequency of denosumab and calcium/vitamin D supplementation is being adhered to.	Overdose is more serious as there is a risk of collapse or hypocalcaemia There is the potential for increase risk of fractures if denosumab and the required calcium and vitamin D supplements are not taken as prescribed. If the patient has missed a dose, over-dosed or is non-adherent to the medication, liaise with treating cancer unit.

Actions for Community Nurses to take when Managing Potential Haemato/oncology Side Effects of Treatments for Patients on Active Cancer Treatments

CODE GREEN (Care managed by community nurses)	1. Mucositis 2. Nausea and Vomiting 3. Body Weakness 4. Diarrhoea 5. Neutropenia (without infection) 6. Pain 7. Skin problems	**CODE RED (Refer patients to the emergency department)**	1. Neutropenic sepsis 2. Superior vena cava obstruction 3. Pericardial disease and tamponade 4. Spinal cord compression 5. Brain metastases 6. Hypercalcaemia 7. Tumour Lysis Syndrome 8. Decreased platelets with active bleeding 9. Disseminated intravascular coagulation
CODE AMBER (Liaise with treating cancer unit regarding care)	1. Stomatitis 2. Nausea and Vomiting 3. Dyspnoea 4. Diarrhoea 5. Constipation 6. Unilateral or bilateral limb swelling 7. Pain		

Numbers above do not indicate level of priority/severity

CODE GREEN - Specific Procedures for Potential Oncological Side Effects of Treatments for Patients on Active Cancer Treatment

Problem	Signs and Symptoms	Response Time	Destination of patient	Action required by the community nurse
1. Mucositis	Painful erythema +/- swelling +/- ulcers +/- bleeding but able to tolerate oral food/fluids (2 litres/24 hours)	Try to manage in the community setting in the first instance	If symptoms worsen despite adherence, liaise with the treating cancer unit. Patient/family explanation and reassurance.	If potentially neutropenic manage accordingly Provide advice on use of prescribed products Provide advice on topical antifungal agent or corticosteroid agents Provide advice on systemic analgesics depending on organ function (Paracetamol/ Ibuprofen) as per hospital advice Advise on increasing fluid intake (2 litres/24 hours) Patient/family reassurance Inform treating cancer unit of patient's condition

CODE GREEN - Specific Procedures for Potential Oncological Side Effects of Treatments for Patients on Active Cancer Treatment

Problem	Signs and Symptoms	Response Time	Destination of patient	Action required by the community nurse
2. Nausea & Vomiting	Reports feeling nauseated/retching but stable symptoms and is able to tolerate oral fluids (2 litres/24 hours)	Try to manage in the community setting	Liaise with treating cancer unit if symptoms progress despite adherence to antiemetic regime	If nausea has occurred immediately on stopping anti emetics and patient is not vomiting then these can be recommenced for a further 2-3 days and the need for admission possibly avoided Inform the patient if their condition changes or continues for another 24 hours they should contact their treating cancer unit Advise on increasing fluid intake (>2 litres/24 hours) Patient/family explanation and reassurance
3. Body weakness	Weakness fatigue and lethargy	Try to manage in the community setting in the first instance		Consider FBC assessment if anaemia is a possibility Encourage rest, adequate hydration and a balanced diet Liaise with treating cancer unit if patient's symptoms progress Patient/family explanation and reassurance

CODE GREEN - Specific Procedures for Potential Oncological Side Effects of Treatments for Patients on Active Cancer Treatment

Problem	Signs and Symptoms	Response Time	Destination of patient	Action required by the community nurse
4. Diarrhoea If pyrexia, temperature greater than 37.5 or less than 35.5 patient may have a neutropenic sepsis, follow code red instructions	Loose bowel motions in 24 hours +/- abdominal pains but stable symptoms and able to tolerate oral fluids (2 litres/24hours)	Try to manage in the community setting in the first instance	Liaise with treating cancer unit if symptoms progress despite adherence to anti diarrhea regime	Encourage adherence with antidiarrhoea regime If the patient is on 5 FU based treatment then liaise with the treating cancer centre who may suggest liaising with the GP to commence Loperamide 4mg orally stat, then 2mgs after each loose stool for up to 5 days (max 16mgs daily) If the patient is on Irinote can treatment then liaise with treating cancer unit who may suggest liaising with GP to commence Loperamide 4mg orally stat, then 2mgs after each loose stool and until 12 hours after last liquid stool up to 48 hours maximum (max 24mgs daily) If the patient is on chemotherapy liaise with treating cancer unit to advise them of patient status as diarrhoea in conjunction with neutropenia maybe a code red For all types of treatment advise on low fibre diet and maximise fluid intake Inform patient if symptoms continue/worsen they must seek medical attention. Inform treating cancer unit of patient status Advise on increasing fluid intake (>2 litres/24hrs) Patient and family explanation and reassurance

CODE GREEN - Specific Procedures for Potential Oncological Side Effects of Treatments for Patients on Active Cancer Treatment

Problem	Signs and Symptoms	Response Time	Destination of patient	Action required by the community nurse
5. Neutropenia but no signs or symptoms of infection (+/- central line in situ)	Absolute neutrophil count < 1.0 FBC result	Try to manage in the community setting in the first instance	If there are no signs or symptoms of infection manage in the community	Perform observations to include temperature, pulse, respirations and blood pressure Assess for recent unwellness, fevers and chills. Avoid people with infections. Ensure adherence to mouth and skin care and adherence with antiemetics and bowel medications Advise on fluid intake (>2litres in 24hours) Avoid contact with people with infections Patient and family explanation and reassurance
6. Pain	Chronic	Try to manage in the community setting in the first instance	If pain worsening despite the adherence to analgesia liaise with the treating cancer unit	Encourage adherence with analgesia regime (if appropriate) if this has not been adhered to then it is reasonable to ask the patient to adhere to the regime and reassess at a later time but encourage the patient to seek a medical review if their symptoms worsen. Inform treating cancer unit of patient's condition Patient and family explanation and reassurance

CODE GREEN - Specific Procedures for Potential Oncological Side Effects of Treatments for Patients on Active Cancer Treatment

Problem	Signs and Symptoms	Response Time	Destination of patient	Action required by the community nurse
7. Skin problems	Redness +/- itch +/- broken area +/- ooze of any area of the skin Petichial Rash Dry Rash	Try to manage in the community setting in the first instance	If symptoms worsen liaise with the treating cancer unit	Establish if the patient is on Monoclonal Antibody (MABs) treatment or if they have received recent radiation and if this is a recently detected onset of a rash. Liaise with the treating cancer unit. Advise that a skin reactions secondary to MABs may represent a pharmacodynamic response (ie positive response to treatment) and drugs should not be discontinued. In the event that the skin has broken, patient has a pyrexia or is unwell /condition worsened liaise with treating cancer unit. Acute radiation induced skin reactions can occur up to 6 weeks after radiation if intact continue skin care regime, if skin broken use a non adherent dressing If adherence to skin care has not been maintained and the patient is not acutely unwell then it is reasonable to advise the patient to commence this and to reassess in 24 hours Advise patient that if in those 24 hours their condition worsens they should contact the treating cancer unit Patient/family explanation and reassurance

CODE AMBER - Specific Procedures for Potential Oncological Side Effects of Treatments for Patients on Active Cancer Treatment

Problem	Signs and Symptoms	Response Time	Destination of patient	Action required by the community nurse
1. Stomatitis	Painful erythema +/- swelling +/- ulcers +/-bleeding UNABLE to tolerate oral food/fluids (2 litres/24 hours)	Within 4 hours	Treating cancer unit	If potentially neutropenic manage accordingly Provide advice on prescribed mouthwash Provide advice on topical antifungal agent or corticosteroid agents Provide advice on systemic analgesics depending on organ function (Paracetamol/Ibuprofen) Advise on increasing fluid intake (2 litres/24 hours) Inform treating cancer unit of patient's condition Patient and family explanation and reassurance
2. Nausea and Vomiting	Reports feeling nauseated /retching which is worsening/UNABLE to tolerate oral fluids (2 litres/24 hours)	Within 2 hours	Treating cancer unit	If nausea has occurred immediately on stopping anti emetic and the patient is not vomiting then this can be recommenced for a further 2/3 days and admission possibly avoided.

CODE AMBER - Specific Procedures for Potential Oncological Side Effects of Treatments for Patients on Active Cancer Treatment

Problem	Signs and Symptoms	Response Time	Destination of patient	Action required by the community nurse
3. Diarrhoea	Loose bowel motions +/- abdominal pains but symptoms worsening or unable to tolerate adequate oral fluids (2 litres/24 hours)	Within 2 hours	Liaise with treating cancer unit if symptoms progressing despite adherence to anti diarrhoea regime	If patient is on 5 FU based treatment then liaise with the treating cancer centre who may suggest liaising with the GP to commence Loperamide 4mg orally stat, then 2mgs after each loose stool for up to 5 days (max 16mgs daily) If patient is on Irinotecan treatment then liaise with treating cancer unit who may suggest liaising with GP to commence Loperamide 4mg orally stat, then 2mgs after each loose stool and until 12 hours after last liquid stool up to 48 hours maximum (max 24mgs daily) If the patient is on chemotherapy liaise with treating cancer unit to advise them of patient status as diarrhoea in conjunction with neutropenia maybe a code red For all types of treatment advise on low fibre diet and maximise fluid intake. Inform patient if symptoms continue/worsen they must seek medical attention Assess for signs and symptoms of dehydration or history of constipation (consider overflow) – if these are present then liaise with treating cancer unit regarding admission Check temperature, pulse and respirations Inform treating cancer unit of patient status Patient and family explanation and reassurance

CODE AMBER - Specific Procedures for Potential Oncological Side Effects of Treatments for Patients on Active Cancer Treatment

Problem	Signs and Symptoms	Response Time	Destination of patient	Action required by the community nurse
4. Constipation	No bowel motion for up to and not exceeding 3 days with no complaints of vomiting or abdominal distension or abdominal pain Heart rate >90 Respirations >20 Shivers/chills/rigour	Try to manage in the community setting in the first instance	Liaise with treating cancer unit if symptoms progressing despite adherence to laxative regime	Encourage adherence with laxative regime(if appropriate) If this has not been adhered to then it is reasonable to ask the patient to adhere to the regime and to reassess at a later time but encourage them to seek medical assistance if condition worsens If patient is on an antiemetic and has no nausea or vomiting liaise with the treating cancer unit to consider stopping these and change /continue with alternative antiemetic If potentially neutropenic manage accordingly and avoid PR interventions Advise on commencing/increasing oral laxative therapy Advise on increasing fluid intake (>2 litres/24 hours) and increasing intake of fruit and vegetables If constipation persists for the next 24 hours or if symptoms develop then advise patient to seek medical attention again Inform treating cancer unit of patients condition Patient and family explanation and reassurance

CODE AMBER - Specific Procedures for Potential Oncological Side Effects of Treatments for Patients on Active Cancer Treatment

Problem	Signs and Symptoms	Response Time	Destination of patient	Action required by the community nurse
5. Unilateral or bilateral limb swelling	Bilateral or unilateral swelling Assess for DVT Assess for lymphoedema if patient has axillary/inguinal nodal surgery	Immediate if suspicious of a DVT Within a week if lymphoedema diagnosed	Treating cancer unit	If lymphoedema is diagnosed liaise with the lymphoedema service, occupational therapists or trained community nurses regarding fitting of a sleeve and assessment for manual lymph drainage Check last surgical appointment as new onset of lymphoedema can in some cases represent a recurrence of a cancer Patient and family explanation and reassurance
6. Pain	Acute	Within 2 hours or sooner if patient is unstable	If pain worsening despite the adherence to analgesia Liaise with the treating cancer unit	Encourage adherence with analgesia regime (if appropriate). If this has not been adhered to then it is reasonable to ask the patient to adhere to the regime and reassess at a later time but encourage the patient to seek a medical review if their symptoms worsen. Inform treating cancer unit of patient's condition Patient and family explanation and reassurance

CODE RED - Specific Procedures for Potential Oncological Side Effects of Treatments for Patients on Active Cancer Treatment

Haematological Emergencies

Problem	Signs and Symptoms	Response Time	Destination of patient	Action required by the community nurse
1. Decreased Neutrophilis (Potential Neutropenic sepsis) 7 days onwards post cytotoxic chemotherapy administration Consider this for all patients complaining of symptoms while on chemotherapy treatment	Fevers greater than 37.5 or less than 35.5 +/- shivers +/- chills +/- rigor +/- confusion +/- generally unwell or No present sign of fever but history of fever within the last 3-5 days or No sign of fever but generally feeling unwell +/- shivers +/- chills +/- rigor +/- confusion or active symptoms of infection and known to be post chemotherapy heart rate <90 respirations <20	Immediate May need emergency ambulance transfer depending on patient status	Treating cancer unit	Coordinate transfer Avoid any exposure to infections from family members who are unwell. Advise patients to avoid cats/flowers/plants Keep patient warm Check blood pressure, pulse and respirations If being admitted by emergency ambulance inform ambulance staff of potential for neutropenic sepsis If being admitted by emergency ambulance to an emergency department the community nurse must notify the treating cancer unit. Patient and family explanation and reassurance

CODE RED - Specific Procedures for Potential Oncological Side Effects of Treatments for Patients on Active Cancer Treatment

Cardiovascular Emergencies

Problem	Signs and Symptoms	Response Time	Destination of patient	Action required by the community nurse
2. Superior vena cava obstruction Most common in patients with lung cancer, thymic cancer and metastatic germ cell cancer	Can be non specific and develop over time Most common include new or progressive - Dyspnoea - Odema of the face and upper limbs and development of collatoral veins - Cough - Colour - Orthopnoea - Tachycardia	Immediate	Treating cancer unit	Coordinate transfer Patient and family explanation and reassurance If being admitted by emergency ambulance to an emergency department the community nurse must notify the treating cancer unit.
3. Pericardial disease and tamponade Most common in advanced cancers of the lung, breast, GI tract, melanoma, sarcoma and Hodgkin's Lymphoma	Most common new or progressive signs and symptoms include - Dyspnoea, - Headache - Visual changes - Feeling of fullness in the face and neck - Increased facial flushing - Visual changes - Mental status changes - Facial/Neck oedema - Collateral distended neck veins	Immediate	Treating cancer unit	Coordinate transfer Patient and family explanation and reassurance If being admitted by emergency ambulance to an emergency department the community nurse must notify the treating cancer unit.

CODE RED - Specific Procedures for Potential Oncological Side Effects of Treatments for Patients on Active Cancer Treatment

Neurological Emergencies

Problem	Signs and Symptoms	Response Time	Destination of patient	Action required by the community nurse
4. Spinal Cord Compression Most common in advanced cancers of the lung, breast, prostate and also can occur in melanoma, kidney cancer sarcoma, lymphoma and multiple myeloma	- New and /or worsening back/leg pain often worse with movement, with cough or having a bowel motion, neck flexion or lying down +/- tingling +/- numbness in lower limbs (unilateral or bilateral) - Motor and sensory loss - New incontinence - Weakness - New and progressive reduced ability to mobilise	Immediate	Treating cancer unit	Coordinate transfer Encourage patient to lie down and keep still Patient and family explanation and reassurance If being admitted by emergency ambulance to an emergency department the community nurse must notify the treating cancer unit.

CODE RED - Specific Procedures for Potential Oncological Side Effects of Treatments for Patients on Active Cancer Treatment

Neurological Emergencies

Problem	Signs and Symptoms	Response Time	Destination of patient	Action required by the community nurse
5. Brain metastases Most common in lung and breast, and also can occur in G/I cancers, G/U cancers, melamona and cancer of unknown primary	Headache-worse in the morning and lessens on getting up Blurred vision Diplopia Nausea and vomiting especially early morning New and progressive unsteadiness on mobilising	Immediate	Treating cancer unit	Coordinate transfer Keep patient upright as much as possible as tolerated Patient and family explanation and reassurance

Metabolic Emergencies

Problem	Signs and Symptoms	Response Time	Destination of patient	Action required by the community nurse
6. Increased calcium (hypercalcaemia) Most common in metastatic breast cancer, non small cell lung cancer, multiple myeloma, squamous cell carcinomas of the head and neck, renal cell carcinoma, lymphoma and gynaecological cancers	Confusion, dry mouth, thirst, anorexia and nausea	Immediate	Treating cancer unit	Coordinate transfer Encourage copious fluids provided patient is alert and not drowsy Patient and family explanation and reassurance

CODE RED - Specific Procedures for Potential Oncological Side Effects of Treatments for Patients on Active Cancer Treatment

Metabolic Emergencies

Problem	Signs and Symptoms	Response Time	Destination of patient	Action required by the community nurse
7. Tumour Lysis Syndrome Most common in rapidly growing bulky tumours that are sensitive to chemotherapy mainly lymphoma (not limited to this cancer)	Metabolic abnormalities include - Hyperuricaemia - Hyperkalcaemia - Hyperphosphatemia - Hypocalcaemia (These require laboratory diagnosis but if a patient has worsening dry mouth or dehydration and confusion they require assessment at cancer unit)	Immediate	Treating cancer unit	Coordinate transfer Patient and family explanation and reassurance

CODE RED - Specific Procedures for Potential Oncological Side Effects of Treatments for Patients on Active Cancer Treatment

Haematological Emergencies

Problem	Signs and Symptoms	Response Time	Destination of patient	Action required by the community nurse
8. Patient reports bleeding or active bleeding (Thrombocytopenia with or without active bleeding) Ten days onwards post chemotherapy Consider this for all patients complaining of symptoms while on chemotherapy treatment	- Haemoptysis - New spontaneous bruising petectial rash - Excessive bruising from trauma - Bleeding from the GI tract, nose or bladder - Bleeding around wounds, central lines If a person is receiving a Vascular Endothelial Growth Factor (VEGF) medication and haemorrhage is detected by nosebleed, haemoptysis or progressive/ severe/continuous headache suspect a cerebral bleed or haemoptysis	Immediate if actively bleeding by emergency ambulance	Treating cancer unit if actively bleeding	Coordinate transfer Apply pressure bandage to areas of bleeding NB Check blood pressure, pulse and respirations Use red/dark towels if available to absorb blood if patient is having haemoptysis If being admitted by emergency ambulance to an emergency department the community nurse must notify the treating cancer unit. Patient and family explanation and reassurance

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Haematological Emergencies

Problem	Signs and Symptoms	Response Time	Destination of patient	Action required by the community nurse
9. Disseminated Intravascular Coagulation Can occur in any cancer but most common on adenocarcinoma especially prostate and pancreas	There is evidence of abnormal bleeding and thrombosis (e.g. DVT, PE) Bleeding is evident in areas of trauma or invasive procedures. Bleeding can occur from the GI tract, nose, bladder. Petechiae, purpura, haematomas or acral cyanosis may be evident. Multiple areas may bleed or ooze simultaneously	Immediate May need an ambulance depending on patient status	Treating cancer unit	Coordinate transfer If being admitted by emergency ambulance to an emergency department the community nurse must notify the treating cancer unit. Patient and family explanation and reassurance

Notes

Community Oncology Nursing Programme

Policies, Procedures and Resource Book

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