Administration of Parenteral Antineoplastic Drugs (Hematology)

Site Applicability

SPH

Skill Level:

Specialized Registered Nurses

PHC or B.C. Cancer Agency (BCCA) Chemotherapy Certification is required to administer antineoplastic drugs for the treatment of hematological malignancies.

Continuing Competency:

Continuing competency and renewal of PHC chemotherapy administration certification requires that specific minimum practice requirements are met.

The renewal process for the certification of antineoplastic administration at PHC is completed annually by meeting any one of 3 continuing competency options.

Option 1

- ★ **more than 24 antineoplastic administrations** (or more than 49 administrations/year for RNs working Medical Short Stay Unit) from July 1st of last year to June 30 of the current year
- ★ 3 learning activities
  - Reading a relevant article
  - Attending a conference, workshop, webinar, talk.
  - Assisting with the updating of workplace procedures, protocols, or policies

Option 2

- ★ **12 to 24 antineoplastic administrations** (for MSSU staff, 25 to 49 antineoplastic administrations) from July 1st of last year to June 30 of the current year
- ★ 3 learning activities
- ★ Continuing Competency Exam (80% or more required)

Option 3

- ★ **Less than 12 antineoplastic administrations** (for MSSU staff, less than 25 antineoplastic administrations) from July 1st of last year to June 30 of the current year
- ★ 3 learning activities
- ★ Continuing Competency Exam (80% or more required)
- ★ an 8 hour Medical Short Stay Unit (MSSU) practicum shift

For all options PHC-NF377 Chemotherapy Certification Continuing Competency and Record of Competency Activities must be completed and submit as directed.

Continuing competency information and forms can be found in the Chemotherapy Certification Renewal portal in LearningHub (search for chemotherapy).

Quick Links

Administration of Antineoplastic Drugs

Administration of Vesicants via Central Venous Access – Infusions

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Administration of Vesicant Antineoplastic Drugs in MSSU

i. Side Arm (IV Push)
ii. Minibag

Related Standards & Resources:

1. B-00-12-10111 - Extravasation Vesicant: Management Procedure
2. B-00-13-10138 - Extravasation of Vesicant: Suspected, Protocol
3. B-00-13-10136 - Neutropenia and Fever: Inpatient Care Protocol
4. B-00-13-10137 - Antineoplastics (Vesicants) for Inpatients at SPH (Administered on MSSU)
5. B-00-13-10153 – Hypersensitivity (Allergic) Reaction
6. B-00-13-10155 – Oral Mucositis, Chemotherapy
7. Parenteral Drug Therapy Manual: Chemotherapy Policies and Monographs
8. Extravasation Pre Printed Prescriber's Orders (Access via SCM)
9. Patient/Family Information (Patient Health Education Materials Catalogue)
10. Occupational Health and Safety Cytotoxic Handling Policy
11. Code Brown (Health Emergency Management)

Definitions

Antineoplastic drug: a drug that prevents, inhibits, or halts the development of neoplasms - new growths that can become cancer.

Biotherapy: treatment used to boost or to restore the ability of the immune system to fight cancer, infections, or other diseases. Agents used in biotherapy include monoclonal antibodies, growth factors, and vaccines.

Chemotherapy: a chemical agent used to treat diseases. The term usually refers to a drug used to treat cancer.

Cancer Treatment *Protocol*: one or more chemotherapeutic drugs used alone or in combination in a well-defined regimen, generally administered cyclically

Cytotoxic: a substance that is potentially hazardous to cells; used commonly in referring to antineoplastic drugs that selectively damage or destroy dividing cells

Hazardous: a substance that may expose a person to a risk of injury or occupational disease

Antineoplastic Orders

- Prescriptions for all IV, SC or oral antineoplastic drugs must be written, not as verbal orders or telephone orders. **If a prescription is amended, the changes must be signed and dated by the prescriber before the treatment is administered or dispensed.**
- The following elements must be provided for in each order:

- prescribing date
- patient name and PHN
- the protocol code (or specific diagnosis if no protocol code assigned)
- name of drug(s) - use approved generic drug names; no abbreviations
- daily dose and number of days of treatment
- route of administration and any administration instructions
- starting dates (and times when appropriate)

The use of preprinted prescribers' orders is highly recommended.

- For hematology antineoplastic orders (CTU): All orders for antineoplastic drugs must be completed no later than 13:00 the day PRIOR to Day 1 AND discussed with Clinical Nurse Leader.
- Hypersensitivity Reaction Orders for Chemotherapy PH581 must be completed for all hematology antineoplastic orders.

Antineoplastic Drug Dosage Checking Responsibilities

- Chemotherapy certified nurses will adhere to the principles and guidelines outlined in the College of Registered Nurses of British Columbian Practice Standard: Drugs, including the seven "rights" of drug administration – right drug, right patient, right dose, right time, right route, right reason, right documentation
- Initiate use of:
  - Antineoplastic Drug Checklist (PHC-NF215) AND
  - Antineoplastic Drug Administration Worksheet (PHC-NF200)
- All antineoplastic drug orders will be checked by at least one chemotherapy certified RN prior to the administration of these drugs to the patient.
- At least one chemotherapy certified RN will check the following ***before*** the administration of any antineoplastic drug:
  - Relevant lab results
  - Calculation of BSA (and/or cBSA if indicated by protocol or prescriber's orders) and dosage of the antineoplastic drug(s) - please see Appendix A for description of BSA & cBSA calculations.
  - The chemotherapy certified nurse will ensure that the ordered dosage(s) fall within the recommended range according to the treatment protocol
- A maximum of a 5% dosage calculation variance is permitted between the prescriber's written order and the RN's calculated dosage. When the dosage is calculated by the RN, the physician's order must fall within 5% of the RN's calculation. To determine if the physician's order falls within that 5%, the percentage change must be calculated. The math for this calculation is outlined below:

  Physician order: cyclophosphamide 1250 mg

  RN calculation: cyclophosphamide 1300 mg

  - Calculate the change between the 2 numbers by subtracting the RN value from the MD value: 1250 – 1300 = -50 (disregard the negative, it does not matter)
  - Divide the change by the RN value: 50 ÷ 1300 = 0.0384

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    - Convert that result into a percentage by multiplying by 100 and adding a % symbol: 0.0384 x 100 = 3.84%
- Identified discrepancies will be discussed with the ordering physician prior to administering the drug
- At least one chemotherapy certified RN, **with** one other RN (who does not need to be chemotherapy certified) will independently double-check the following:
    - Patient height and weight
    - Original order (PPO) vs. MAR vs. label on antineoplastic infusion bag/syringe
    - Patient identity – using 2 different patient identifiers (check against the label on the antineoplastic drug)
    - Programming of the infusion pump (if a pump is being utilized):
        - Rate in mL/hr
        - Total volume
        - Total volume infused is set at zero
        - Pump is locked
        - *Each of the two nurses will sign for having completed this check on the patient's MAR and on NF200*
- A chemotherapy certified RN who is caring for a patient on multi-day antineoplastic drug therapy and who has not done a full antineoplastic drug check on that patient for the current course of treatment, will do so before the administration of any antineoplastic drugs.

Calculating Body Surface Area (BSA)

Because BSA is calculated using weights (kg) and heights (cm), accurate weights and heights are needed to ensure optimal treatment and to prevent antineoplastic drug under-dosing or overdosing. See Appendix A

Weights should be measured with each cycle of antineoplastic drug therapy as weight can change over time.

Administration

IV Tubing & Infusion Bags

- Only luer lock needleless tubing will be used for the administration of antineoplastic drugs via an infusion
- All tubing used to administer antineoplastic drugs will be primed with a non-antineoplastic solution
- All antineoplastic infusions will be administered via a secondary drug line, except in those cases where the nature of the antineoplastic requires specialty tubing
- The secondary drug line is used for the administration of ONE antineoplastic drug only
- Antineoplastic drugs are not usually administered concurrently via Y-site, even if they are compatible

- vinCRIStine and vinBLAStine are prepared in a mini-bag only and administered through a central venous catheter (CVC) on inpatient units OR may be administered via peripheral IV access when given by a chemotherapy certified nurse from the Medical Short Stay Unit.

Infusion Pumps

- Antineoplastic infusions must be regulated by the use of an electronic infusion pump with a functioning alarm (NOT by gravity infusion).
- A vesicant drug when given peripherally must **never** be administered via an infusion pump

IV Access

- Midlines should NOT be used for antineoplastic drug administration because of the difficulty in detecting infiltration or extravasation, and the increased risk of serious complications
- Antineoplastic drugs, both vesicant and non-vesicant, given through a functioning **central venous access device** (i.e. tunneled right atrial catheter, implanted venous access device, peripherally inserted central catheter), may be administered by:
    - Infusion (via an infusion pump) or
    - MSSU ONLY – IV push via the sidearm of a primary IV line flowing freely at all times by gravity

Miscellaneous

- Some routes are designated for administration by physician only (e.g. intrathecal)
- For antineoplastic drugs that have a known high risk of hypersensitivity reactions the RN will remain with the patient during the first 10 minutes of the infusion and confirms that a physician is available if paged on an urgent basis

Medical Short Stay Unit only

- Only physicians and chemotherapy certified RNs can give antineoplastic vesicant drugs via the IV direct method (push)
- An antineoplastic vesicant drug that must be given as a peripheral infusion will be supplied in a minibag and administered by gravity over the time specified in the order as a secondary drug through a free-flowing IV. The RN will remain with the patient, and will check blood return and assess the IV site every 2 minutes throughout the procedure

SAFE HANDLING

- For the most complete and current practice standards related to cytotoxic drug handling please refer to the PHC OH&S Hazardous Drug Handling information and the PHC Code Brown Hazardous Spills
- WorkSafe B.C. regulations require all staff who prepare, handle, or administer cytotoxic drugs to keep handling records. Document name of drug/s and date handled on the

Handling Record Cytotoxic Drugs PHC-NF274. The employer is responsible for maintaining these records for the duration of employment, plus 10 years.

- Personal protective equipment (PPE) must be worn whenever staff have potential contact with cytotoxic drugs, contaminated equipment or contaminated patient wastes. PPE includes:
  - Medical Grade powder-free latex or powder-free nitrile, such as Sensicare Silk Nitrile Powder-free gloves – wear 2 pairs of gloves: first pair *under* cuff of gown and second pair *over* cuff
  - Disposable, moisture-resistant, long-sleeved gown with cuffs
  - Eye/face protection – mask and shield

    Used disposable PPE must be handled as cytotoxic waste.
- Cytotoxic drug precautions requiring safe handling practices must be put in place for **48 hours** (also referred to as the "precautionary period") after the last dose of antineoplastic drug is completed.
  - Place Cytotoxic Precautions sign (NF371) above the patient's bed or on the door to the patient's room
- Place a cytotoxic waste container, AND, a cytotoxic sharps container, in the patient's room
  - Ensure that an absorbent pad lines the bottom of the containers
  - When the containers are 75% filled, they are considered full
- Antineoplastic tablets or capsules will be handled using chemotherapy approved gloves, and a no-touch technique to avoid damage and contamination.
- Antineoplastic tablets or capsules will not be cut or crushed

Refer to Appendix B for a complete list, and ordering information, for PPE and other related supplies

BEFORE ADMINISTRATION OF ANTINEOPLASTIC DRUGS

Pre-Medications

- Administer anti-emetics and/or other pre-medications as ordered.
- Anti-emetics should be started 30 minutes to 2 hours pre antineoplastic drug administration and may continue for 24 to 72 hours after the administration of antineoplastic drugs and/or as ordered.
- If administering antineoplastic drugs with a high risk for hypersensitivity reaction, ensure that pre-medications such as acetaminophen and diphenhydrAMINE have been administered and that emergency drugs and equipment are available as outlined in PH581 Hypersensitivity Reaction Orders for Chemotherapy:
  - EPInephrine
  - DiphenhydrAMINE
  - Salbutamol for nebulizer
  - Oxygen and nebulizer equipment

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- Suction

Assess & prepare IV access

- Wash hands and put on personal protective equipment (PPE) as described above
- If using a peripheral IV for the administration of antineoplastic drugs, ensure that the site is new (less than 24 hours old), or insert new IV (preferable)
- If inserting new IV:
  - Choose a large peripheral vein to administer the antineoplastic or biotherapy. The large veins of the forearm are preferred.
  - Avoid: fingers, hands, and points of flexion
  - Choose a small-gauge, plastic cannula
  - Avoid use of steel cannula

For all IV sites (CVC & PIV):

- Inspect the IV site for leaking, swelling, tenderness, redness
- Assess the patient's statements about comfort/discomfort of IV access
- Check the IV for patency by assessing for blood return by one of the following methods:

  Method A

  a) Clean cap (scrub the hub)
  b) Attach pre-filled normal saline syringe to cap
  c) Clamp off IV fluid from bag
  d) Flush "a little" normal saline (approximately 2 to 3 mL)
  e) Pull back syringe plunger to get blood return. Aspiration of blood return should come easily. Aspiration and flushing of peripheral IV should come without resistance and without patient reporting pain and/or burning
  f) Flush with normal saline. Repeat with another pre-filled normal saline syringe

  Method B

  a) Gently pinch IV tubing just above or below distal access port of IV tubing. Check that blood returns into IV catheter or tubing.

  Method C

  a) drop height of primary IV solution to below the height of the insertion site and observe for blood return into IV catheter or tubing
- Ensure primary line is infusing freely by gravity

Setting up

- Examine drug for appearance and integrity
- If the patient expresses concern regarding accuracy of a drug, do not give the drug. Explore the patient's concern, verify the order, and notify the prescriber if appropriate
- Connect secondary drug line to primary line and back flush to prime the secondary drug line
- Position an absorbent pad on the floor to catch any spills

- Work at waist level and insert the secondary infusion line spike into the antineoplastic drug infusion bag
- Label the primary and secondary infusion lines with caution stickers that come with the antineoplastic drug from pharmacy or as available on the ward
- Use non-DEHP infusion sets, infusion bags and a non-DEHP 0.22 micron in-line filter for medications that indicate so

A. Administering Vesicant Antineoplastic Drugs via Central Venous Access – *Infusions*

Reminders

- Ensure extravasation kit is available
- Ensure that the IV insertion site is visible during the entire antineoplastic drug infusion

Assessment during antineoplastic drug infusion

If patient reports discomfort/changes OR nurse notes changes to IV insertion site:

- Stop injection or infusion
- Assess for vein irritation, flare reaction or extravasation
- Allow unmedicated IV to run freely, or flush line with 10 to 30 mL of saline, while observing for swelling or symptoms of discomfort at site
- If pain persists, discontinue use of that vein, and assume that extravasation has occurred
- Refer to Extravasation Management Procedure and Extravasation Suspected: Protocol for extravasation guidelines. See also Extravasation PPO's (in SCM) and PHEM catalogue

B. Administering Vesicant Antineoplastic Drugs – MSSU Only

Reminders:

- Vesicant antineoplastic drug administration via peripheral IV access is administered by chemotherapy certified nurses in the MSSU ONLY
- An antineoplastic vesicant drug when given peripherally must **never** be administered via an infusion pump
- An antineoplastic vesicant drug that must be given by infusion via peripheral IV access will be supplied in a mini-bag and administered by gravity over the ordered time as a secondary drug through a free-flowing IV
- Use a central venous access device to administer any antineoplastic vesicant drug infusing for longer than 30 to 60 minutes
- An antineoplastic vesicant drug, when given via IV push peripherally, will be administered via the distal access port of a primary IV line flowing freely at all times by gravity
- Ensure extravasation kit is available
- Ensure that the IV insertion site is visible during the entire infusion

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C. Administering via *IV push ("side-arm method") - Peripheral or Central Venous Access*

Administration

- Working at waist level, insert IV interlink cannula of syringe containing antineoplastic drug into distal access port of IV infusion line
- Inject up to 2 mL of the antineoplastic drug into free-flowing IV allowing the flush solution to dilute the drug. Always keep hand on plunger of syringe to prevent reflux. Inject slowly enough that IV flow does not stop or reverse.

Assessment during antineoplastic injection

- Ensure CVC site is visible throughout injection
- Ask patient to inform the nurse of any changed sensation or discomfort at IV insertion site (e.g. stinging, burning, pain)
- Assess tissue surrounding IV insertion site for redness, swelling, or formation of a bleb
- Continue to allow unmedicated IV fluid to run freely
- Check for blood return every 2 mL of antineoplastic injected
- Continue administration as long as blood return is present, IV site appears normal, and patient is comfortable

If blood return is lost OR patient reports discomfort/changes OR nurse notes changes to IV insertion site:

- Stop infusion
- Assess for vein irritation, flare reaction, or extravasation
- Allow unmedicated IV to run freely, or flush line with 10 to 30 mL of saline, while observing for swelling or symptoms of discomfort at site
- Recheck for blood return
- If no blood return and/or pain persists, discontinue use of that vein, and assume that extravasation has occurred
- Refer to Extravasation Management Procedure and Extravasation Suspected: Protocol for extravasation guidelines. See also Extravasation PPO's (in SCM) and PHEM catalogue

When the injection is complete

- Place 2 x 2 gauze under distal access port of IV infusion line, carefully remove interlink cannula and discard in cytotoxic waste container
- Flush the primary drug line with a minimum of 25 mL of primary IV solution (allow IV fluid to run freely)
- IV infusion set and associated equipment should be discarded in the cytotoxic waste container

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D. Administering Via *Mini-bag Infusion*

Assessment during antineoplastic drug administration

- Remain with the patient for the duration of the infusion
- Check for blood return and assess the IV site every 2 minutes throughout the infusion
- Ensure CVC site is visible throughout injection
- Ask patient to inform the nurse of any changed sensation or discomfort at IV insertion site (e.g. stinging, burning, pain)
- Assess tissue surrounding IV insertion site for redness, swelling, or formation of a bleb

If blood return is lost OR patient reports discomfort/changes OR nurse notes changes to IV insertion site:

- Stop infusion
- Assess for vein irritation, flare reaction, or extravasation
- Allow unmedicated IV to run freely, or flush line with 10 to 30 mL of saline, while observing for swelling or symptoms of discomfort at site
- Recheck for blood return
- If no blood return and/or pain persists, discontinue use of that vein, and assume that extravasation has occurred
- Refer to Extravasation Management Procedure and Extravasation Suspected: Protocol for extravasation guidelines. See also Extravasation PPO's (in SCM) and PHEM catalogue

Assessment during antineoplastic drug infusion

- Assess patient for signs or symptoms of acute infusion reactions such as hypersensitivity and cytokine-release syndrome
- For antineoplastic drugs that have a known high risk of hypersensitivity reactions the RN will remain with the patient during the first 10 minutes of the infusion and confirms that a physician is available if paged on an urgent basis
- Assess patient for any immediate side effects of antineoplastic drugs (i.e. nausea and vomiting)

If patient reports discomfort/changes OR nurse notes changes to IV insertion site:

- Stop infusion
- Assess for vein irritation or flare reaction
- Allow unmedicated IV to run freely, or flush line with 10 to 30 mL of saline, while observing for swelling or symptoms of discomfort at site
- Recheck for blood return
- If no blood return and/or pain persists, discontinue infusion and notify physician

When the infusion is complete

- When the antineoplastic drug has been completely infused, back flush into secondary drug infusion line

- Allow secondary drug infusion line drip chamber to empty, then clamp just above the fluid line level. Remove/disconnect the secondary IV infusion line (with empty antineoplastic bag attached) from the primary IV infusion line and discard into the cytotoxic waste container
- Flush the primary infusion line with a minimum of 25 mL of primary IV solution. If primary IV infusion line is not needed for other IV drugs, discard entire set.

Patient Education and Resources:

1. *Always allow opportunities for questions and assessment of understanding. Explain rationale for the use of antineoplastic drugs:*
   - Assess the patient and family's current understanding of diagnosis and treatment
   - Provide general cancer antineoplastic drug information (i.e. how it works)
2. *Review patient specific antineoplastic drug information*
   - Provide the patient and family with antineoplastic drug(s) information:
     - Route
     - Dosage
     - Frequency
     - Expected side-effects (and how these will be managed)
     - Self-care measures
3. *During antineoplastic drug administration*
   - Instruct the patient to notify the nurse immediately if:
     - They feel pain, burning, or discomfort at the injection site
     - They have difficulty breathing
     - Their chest feels heavy
     - They feel a sudden sense of impending doom
     - They feel itchy or develop a rash
4. *After antineoplastic drug administration has finished*
   - Instruct patient and family regarding antineoplastic toxicities
     - When and what to expect
     - How to keep safe
   - If the patient is going home immediately after receiving antineoplastic drug, provide:
     - Fever Card FA.113.F4361.PHC – print off from PHC Connect – Patient Health Education Materials. Complete all sections of the card and review with patient and/or family.
     - Information for when to contact MD, visit nearest hospital emergency department, or call 911 as per the Febrile Neutropenia patient teaching pamphlet
   - Instruct patient and family on the administration, storage, and handling of oral antineoplastic agent(s), including the importance of taking them as scheduled, swallowing oral antineoplastic whole, and taking unused drug to the clinic or pharmacy for proper disposal

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- Instruct patient and family on the safe handling and disposal of cytotoxic body fluids in the home setting
- Instruct patient and family on the importance of keeping appointments for laboratory tests and clinical examinations
- Discuss goals of therapy and how response to therapy is measured

Documentation:

Before administration of antineoplastic drugs, initiate use of:

- Antineoplastic Administration Checklist (PHC-NF215) and
- Antineoplastic Administration Worksheet (PHC-NF200)

Complete all sections of both forms, as directed, before administering antineoplastic drugs.

Please print NF483 Aftercare for Patients Receiving Antineoplastic Drugs. NF483 is a careplan for patients receiving antineoplastic drugs and is geared to those nurses who are not chemotherapy certified. There is a small section on the form that must be filled in by the chemotherapy certified nurse – please compete before placing NF483 in the patient's Kardex.

Document assessments and interventions as per documentation policies.

References:

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2. Providence Health Care Cytotoxic Handling Policy. Retrieved from http://phcconnect.vch.ca/programs_services/icu/safety/_docs/cytotoxic_precautions/binary_86231.pdf on March 6, 2013
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Persons/Groups Consulted:

MD Hematology
Clinical Nurse Leader, Medical Short Stay Unit
Nurse Educator IV Therapy; Patient Educator IV Program
Nurse Educator, Acute Medicine
Pharmacist
Nurse Educator, Renal Program
Nurse Educator, Hemodialysis

Developed By:

Clinical Nurse Specialist, Chemotherapy

Revised By:

Clinical Nurse Specialist, Chemotherapy

Approved By: Professional Practice Standards Committee

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Appendix A Calculating Body Surface Area (BSA) and Antineoplastic Dosage Orders

Because BSA is calculated using weights and heights, accurate weights and heights are needed to ensure optimal treatment and to prevent antineoplastic under-dosing or overdosing. Weights should be measured with each cycle of antineoplastic as weight can change over time. Some protocols indicate using BSA calculated using the patient's corrected body weight (prevents over/under dosing of patients).

Calculating BSA

The formula used to calculate a patient's body surface area is called the Mosteller formula:

$$\sqrt{\frac{\text{Height (cm)} \times \text{Weight (Kg)}}{3600}}$$

Example of Dosage Calculation Using BSA

Step 1

Ms. Luisa Concepcion is admitted to your unit with a diagnosis of diffuse large B cell lymphoma. During your nursing admission you weigh Luisa and measure her height. Luisa weighs 70 kg and is 160 cm tall.

Step 2

Calculating BSA
The formula for calculating body surface area (m^2) is:

$$\sqrt{\frac{\text{Height (cm)} \times \text{Weight (Kg)}}{3600}}$$

$$\sqrt{\frac{160 \times 70}{3600}}$$

BSA = 1.76 m^2

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Step 3

Calculating Antineoplastic Orders
DOXOrubicin 50 mg/m^2 = _____ mg IV push on day 1. ▪ 50 x 1.76 = 88 mg vinCRIStine 1.4 mg/m^2 =_____mg IV in 50 mL NS over 15 minutes on day 1. ▪ 1.4 x 1.76 = 2.46 mg cyclophosphamide 750 mg/m^2 =_____mg IV in 100 to 250 mL NS over 20 minutes to 1 hour on day 1. ▪ 750 x 1.76 = 1320 mg

Appendix B Cytotoxic Precautions Summary Posters

If your patient is receiving chemo, or your patient is on cytotoxic precautions, please note that you need to use some, or all, of this stuff.

Providence HEALTH CARE — How you want to be treated.

Setting up the patient's room			Preparing and administering cytotoxic medications when a risk of splash exists – IV, SC, oral liquids) & when handling BBF of patients during the 48 hour cytotoxic precautionary period			
						
• Post on patient's door and/or above the patient's bed	• 50 or 20 litre cytotoxic waste container • For all cytotoxic waste EXCEPT sharps • Place inside patient's room • Replace when 75% full	• 32 litre cytotoxic sharps container • For sharps ONLY • Replace when 75% full	• Disposable • 1 X use, then discard • Discard into 50 litre cytotoxic waste container	• Chemotherapy gloves • Use for administration and for handling body wastes • Wear 2 pairs: one pair under gown cuff and second pair over gown cuff	• Use shield and a procedure mask if there is any risk of splash	• Stick on laundry bags containing used linen from patients during the 48 hour cytotoxic precautionary period
NF371—order from Royal Printers	50 L PeopleSoft# 00107306 20 L PeopleSoft# 00093613	PeopleSoft# 00003924	PeopleSoft# 00105360	Already available on most units	Shield—PeopleSoft# 00011991 Mask—PeopleSoft#00080385	PeopleSoft# 00075421

If your patient is receiving chemo, or your patient is on cytotoxic precautions, please use this table to figure out what you need to wear and/or use.

What you are doing	PPE that you will need
• Routine patient care with no risk of contact with cytotoxic medications or body fluids • For example: BP check, talking	Nothing
• Preparing and administering oral cytotoxic medication in pill or capsule form	1. Single pair of chemotherapy gloves
• Preparing and administering cytotoxic medications when a risk of splash exists (IV, SC, oral liquids) • When handling body fluids of patients during the 48 hour cytotoxic precautionary period	1. Disposable blue chemotherapy gown 2. 2 pairs of chemotherapy gloves 3. Face shield 4. Procedure mask
• Cleaning up spills that contain cytotoxic agents (spills of medications OR body fluids)	1. Cytotoxic Spill Kit (gown included) 2. Surface Safe wipes

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Appendix C: Patient Care Plan

Providence HEALTH CARE

St. Paul's Hospital

AFTERCARE FOR PATIENTS RECEIVING ANTINEOPLASTIC DRUGS

Date:

Use this careplan when caring for a patient who is, or has recently been receiving an antineoplastic drug.

Myelosuppression – *neutropenia, anemia, thrombocytopenia*

- ★ Some antineoplastic drugs have a strong effect on the bone marrow, resulting in a temporary, but sometimes severe, decrease in its ability to produce blood cells
- ★ After a patient has received such an antineoplastic drug, blood cell production will decrease over the course of days to weeks, with the lowest point being called the "nadir"
- ★ For most antineoplastic drugs the nadir will fall sometime between 4 and 16 days after last receiving the drug
- ★ Counts will usually return to normal in 7 to 28 days

Antineoplastic Drug(s) + Nadir

Chemotherapy Certified RN to Complete

1. **Drug:** _____ **Nadir Date:**
2. **Drug:** _____ **Nadir Date:**
3. **Drug:** _____ **Nadir Date:**

Sample Only Do Not Use

*****At the start of every shift always check your patient's lab results*****

NEUTROPENIA

Normal neutrophil count = 4.5 – 11 giga/L

- ★ Neutropenia = 0.5 giga/L ∗OR∗ 1 giga/L with count expected to drop over next 48 hours
- ★ Neutrophils are the body's first responders when fighting infection
- ★ Neutropenia puts the patient at risk for life-threatening infection (sepsis) – death within hours
- ★ Since the inflammatory response is diminished when a patient is neutropenic, a fever may be the earliest and only sign of infection
- ★ **Fever** in a neutropenic patient is a **medical emergency** – notify the hematologist and/or the on-call team **STAT**
- ★ Immediate assessment and administration of **antibiotics within 1 hour** are critical

Assessment

- ★ At the start of every shift:
  - Complete physical assessment – don't forget to include skin integrity; skin to perianal area; IV access; nasal/sinus congestion
- ★ Assess and notify MD STAT:
  - Fever
  - Hypotension
  - Neurological changes
  - Dyspnea; new cough
  - Chills, rigors
- ★ Assess and notify MD ASAP for:
  - Mouth ulcers, difficutly swallowing
  - Diarrhea
  - Any new pain or symptom

Refer to Neutropenia NCS6441 for complete guidelines.

Interventions

- ★ Discuss need for private room with the CNL
- ★ Handwashing
- ★ Encourage the patient and family/visitors to wash hands with soap and water or with hand sanitizer:
  - Before and after eating
  - After using the washroom
  - After coughing or sneezing into hands
- ★ Leave bottle of hand sanitizer with patient
- ★ Place "Neutropenic Precautions" (NF188) sign on patient's door
- ★ Replace the patient's drinking water frequently
- ★ Discard uneaten food
- ★ Advise patient to avoid prepared luncheon meats

DO NOT SCAN INTO THE PATIENT RECORD

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ANEMIA

Normal hemoglobin = 120 g/L to 160 g/L

Anemia:

- ★ Mild (Grade 1) = Hgb 100 g/L to 115 g/L
- ★ Moderate (Grade 2) = Hgb 80 to 99 g/L
- ★ Severe (Grade 3) = Hgb 65 to 79 g/L
- ★ Life-threatening (Grade 4) = Hgb <65 g/L

Assessment

- ★ Changes in functional abilities
- ★ Difficulty sleeping
- ★ Dyspnea – exertional and/or at rest
- ★ Mood changes – depression, anxiety
- ★ Difficulty concentrating
- ★ Pain

Interventions

- ★ Assist patient with ADLs
- ★ Group activities to promote rest periods
- ★ Keep patient's belongings within reach
- ★ Minimize environmental stimuli
- ★ Assess need for sleep aids
- ★ Assess need for analgesia

THROMBOCYTOPENIA

Normal platelet count = 150 - 400 giga/L

- ★ Platelet count of less than 20 giga/L is not unexpected after some antineoplastic drugs

Assessment (symptoms of hemorrhage):

- ★ Restlessness, confusion, lethargy
- ★ Change in vision
- ★ Hypotension, tachycardia, dizziness

Interventions

Advise your patient to *avoid*:

- ★ Blowing their nose forcefully; picking
- ★ Coughing forcefully
- ★ Straining during BMs
- ★ Using a straight edge razor
- ★ Wearing tight clothing

Advise your patient to wear shoes or slippers when they are mobilizing.

TUMOUR LYSIS SYNDROME (TLS)

- ★ **TLS is a medical emergency**
- ★ Caused by massive release of cell contents into the systemic circulation after antineoplastic treatment
- ★ Results in hyperuricemia, hyperkalemia, hyperphosphatemia, hypocalcemia and, potentially, renal failure

Assessment

- ★ Urine output
- ★ Serum electrolytes - hyperkalemia most dangerous
- ★ Assess for symptoms of fluid overload

Interventions

- ★ Aggressive IV hydration
- ★ Allopurinol
- ★ Encourage oral fluids
- ★ Limit oral potassium, phosphate intake

ORAL MUCOSITIS – MOUTH CARE

- ★ Ulcers develop 7 to 10 days after the initiation of antineoplastic drugs
- ★ Mucositis lasts approximately 1 week and generally heals spontaneously 21 days after the initiation of antineoplastic drug treatment
- ★ Mucositis increases a patients chances of developing an infection 3-fold

Assessment

- ★ Oral edema; erythema; bleeding
- ★ Ulceration
- ★ Cracked lips
- ★ Pain
- ★ Difficulty chewing, swallowing, speaking
- ★ Distortion of taste

Refer to Oral Mucositis NCS6447 for complete guidelines.

Interventions

- ★ At the start of your shift, using a flashlight, assess your patient's mouth
- ★ Advise patient to rinse mouth QID with normal saline
- ★ Provide patient with normal saline for mouth rinses – change bottle at least Q24 hours
- ★ Provide systemic analgesia for mouth pain

Sample Only Do Not Use

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Questions, concerns, comments about PHC guidelines can be emailed to: nursingstds@providencehealth.bc.ca