THE VALLEY HOSPITAL
Ridgewood, New Jersey

PATIENT CARE SERVICES POLICY AND PROCEDURE

SUBJECT: Chemotherapy, IV, Adults

PURPOSE:
To define the necessary actions taken to ensure the safe administration of chemotherapy agents.

POLICY:
It is the policy of The Valley Hospital to administer Chemotherapy in accordance with current Oncology Nursing Society (ONS) Guidelines.

WHO CAN PERFORM: Registered nurse (RN), Oncology Nursing Society (ONS) Chemotherapy/Biotherapy Certified Nurse with the exception of the listed unrestricted oral anti-neoplastic agents. All RNs can monitor for potential adverse reactions and side effects.

SUPPORTIVE DATA:
Chemotherapy agents are cytotoxic drugs used primarily in the treatment of cancer. They alter the reproductive cycle of cells and cause cell death. Chemotherapy may be used as primary or adjuvant therapy, with the goal being cure, control, or palliation.

THIS PROCEDURE IS DIVIDED INTO 7 SECTIONS. THE SECTIONS ARE:

SECTION I: ADMINISTRATION OF CHEMOTHERAPY

POLICY:
1. This policy defines the authority of the RN to administer chemotherapy to patients. These agents are restricted based on route.
2. The RN has the right to refuse to give a medication if the nurse believes it would be unethical to do so, based on education, skill, and/or knowledge of the drug and its effect.
3. It is the responsibility of the individual RN to know or gain knowledge of the ordered medication and its effects, it's possible adverse effects, the proper technique, and the appropriate length of time of administration. It is also the responsibility of the nurse to follow all established general rules, policies, and procedures regarding the administration and proper disposal.
4. All RNs are prohibited from taking telephone orders for chemotherapy

A.

THE FOLLOWING CHEMOTHERAPEUTIC AGENTS ARE UNRESTRICTED BASED ON ROUTE OF ADMINISTRATION. THEY MAY BE ADMINISTERED BY A RN IN ALL PATIENT CARE AREAS.

Oral Chemotherapeutic Agents

Bexarotene (Targretin)
Busulfan (Myleran)
Capecitabine (Xeloda)
Chlorambucil (Leukeran)
Cyclophosphamide (Cytoxan)
Estramustine (Emcyt)
Etoposide (VP-16, Vepsid, Etopophos)
Hydroxyurea (Hydrea, Mylocel)
Imatinib mesylate (Gleevec)
Lomustine (CeeNu)
Melphalan (Alkeran)
Mercaptopurine (6-MP, Purinethol)
Methotrexate (MTX)
Procarbazine (Matulane)
Temozolomide (Temodar)
Thalidomide (Thalomid)
Thioguanine (6-thioguanine, 6-TG)

Topical Chemotherapeutic Agents

Fluorouracil 5% cream (Carac ™, Efudex ®, Fluoroplex, 5-FU)

B. Chemotherapy Administration Qualifications for Intraperitoneal, Intramuscular (IM), Intravenous
(IV – push or continuous infusion) and Subcutaneous Routes.

Chemotherapy agents are administered to patients on an inpatient, same day and outpatient basis. These medications may be administered only by a RN qualified by The Valley Hospital in Adult Chemotherapy Administration.

Requirements:

1. IV Qualified
2. Current Basic Life Support (BLS)
3. Competency in the care of vascular access devices (VADs)
4. Successful completion of Chemotherapy and Biotherapy Course
5. Completed skills checklist for Chemotherapy Administration
    a. Adult Infusional Chemotherapy Qualified [Intravenous piggyback (IVPB), Continuous Infusion (CI)] and Intraperitoneal (IP)
    b. Adult intravenous push (IVP) Chemotherapy Qualified

C. Maintenance of Chemotherapy Certification:

Adult Chemotherapy certification must be maintained through Oncology Nursing Society (ONS) Chemotherapy/Biotherapy course per practice standards. Annual clinical competency must be completed by return demonstration of skills. Self-learning modules are also required annually. Per ONS practice standards, it is the responsibility of the professional nurse to maintain ongoing education.

D. Refer to Micromedex for a list of antineoplastic agents and or pharmacy for a list of Category 10:00 Antineoplastic agents from the American Hospital Formulary Service (AHFS). THESE MEDICATIONS CAN ONLY BE ADMINISTERED BY AN RN WITH CHEMOTHERAPY QUALIFICATION.

E. Routes of Chemotherapy Administered by Licensed Independent Practitioner (LIP) Only:

1. Bladder Irrigation
2. Intrathecal Chemotherapy
3. Intraarterial

SECTION 2: PRE-TREATMENT

PROCEDURE:

1. Review patient allergy history.
2. Review recent lab work and collaborate with Pharmacist. (RPh)
   Notify LIP and Pharmacy first before treatment if:
   ANC less than 1500
   Hgb less than 8
   Platelets less than 100,000
   BUN greater than 40
   Cr greater than 1.7
   Total Bilirubin greater than 2
3. Identify patient by name and date of birth and conduct nursing assessment.
4. Review with patient their tolerance to any previous treatment (i.e., hypersensitivity reactions or insufficient antiemetic response, as well as any post treatment side effects).
5. Review old records for history, previous treatment and tolerance.
6. Obtain/review orders from LIP.
7. Weigh and measure patient and record in electronic medical record (EMR). Body Surface Area (BSA) will be calculated by electronic medical record (EMR)
8. Verify informed consent for chemotherapy.
9. Verify dosages; consult with Pharmacist as necessary.
10. Have emergency equipment, extravasation tray and Chemo Spill Kit available.
11. Document all pre-treatment procedure as stated above in EMR.

SECTION 3: PATIENT EDUCATION

PROCEDURE:

1. Educate patient regarding the procedure for administration and the specific chemotherapy drugs to be administered.
2. Explain/review potential drug specific side effects and their management (i.e., myelosuppression, nausea/vomiting, anorexia, mucositis, diarrhea/constipation, alopecia, skin changes, altered mucous membranes, sexual dysfunction, pulmonary toxicity, nephrotoxity, cardiotoxity, ototoxicity, and peripheral neuropathy).
3. Instruct patient to report adverse effects immediately and explain procedure for contacting nurse/LIP.
4. Provide written instructions (i.e. chemo teaching book, oral care instructions, drug

information sheets, implanted port/Hickman booklet, list of supportive services, and community resources).

5. Discuss importance of follow-up with LIP and signs/symptoms to report to LIP after discharge including fever greater than 38° Celsius (100.4° Fahrenheit), uncontrolled nausea/vomiting, diarrhea, constipation, evidence of bleeding or infection, rash or skin changes, sudden weight loss or gain, increased pain, anorexia, inability to tolerate fluids.
6. Document all teaching in the EMR.

SECTION IV: MEDICATION PREPARATION

PROCEDURE:

1. Compare medication orders on the electronic medication administration record (MAR) against LIP order. Verify dosage according to (BSA) or Area Under the Curve (AUC) if required. Compare dosage with previous treatments and/or review with pharmacist as needed. Confirm that drug dose falls within standard prescribing range.
2. Second RN will complete an additional independent evaluation of medication, dosage calculation, BSA or AUC, rate of medication to be administered, and correct pump setting. This will verify the primary RN's calculations.
3. All chemotherapy drugs are to be mixed in pharmacy. Dosages and diluents are reviewed by the pharmacist and compared to LIP's order in the EMR.
4. Refer to Patient Care Services Policy 21:22, *Safe Handling of Chemotherapy*.
5. Ensure that all syringes and IV bags are properly labeled as to drug name, dosage, patient's name and location, V number, expiration date, vesicant and chemotherapy label.
6. All documentation to be done in EMR.

SECTION V: ADMINISTRATION OF IV CHEMOTHERAPY

PROCEDURE:

1. Begin new IV line if administering a vesicant. May use preexisting IV if appropriate for non-vesicant medication.
2. Prior to administration, review specific chemotherapy protocols and MAR to ensure that appropriate pre-medications and supportive therapies have been administered.
3. Instruct patient to inform nurse immediately in the event of pain or burning at the IV site, edema around the site, or change in his/her physical status.
4. If venous patency is doubtful at any time during administration, stop the IV and change IV site to proximal site.
5. Rate of administration of IV push drugs is determined by pharmaceutical manufacturer.
6. Personnel administering chemotherapy must wear chemotherapy gloves and disposable, lint-free, nonabsorbent gowns.
7. **Continuous vesicant drugs cannot be administered through a peripheral line.**
   a. They must be infused via a centrally placed (VAD). Assess line for blood return every 4 hours.
   b. IVP vesicant drugs must be administered through a compatible running IV in either the fleshy part of the arm (avoiding sites over joints, such as the hand, wrist or antecubital fossa) or through a centrally placed VAD.
   c. When giving IVP, A blood return must be obtained prior to, during and after vesicant administration. Check for blood return after each 2 ml of drug administered (for

peripheral VAD) or each 5 ml of drug administered (for central VAD). Monitor also for flare reaction.

d. If extravasation is suspected, refer to Oncology NPEC, A*pproved Reference(s)* PCS policy #10:24.

8. When administering a vesicant through a central vascular access device (VAD)
   a. Administer via IV push, short infusion, or continuous infusion, as ordered.
   b. Verify blood return prior to, during, and after drug administration.
   c. Monitor the IV site throughout the infusion
   d. Discontinue vesicant administration at the first sign of extravasation
9. When administering a vesicant through a peripheral VAD
   a. Limit administration to short infusion lasting no longer than 30–60 minutes (Sauerland et al., 2006).
   b. Verify blood return every 2–5 ml and/or 5–10 minutes during a short infusion (Sauerland et al., 2006).
   c. Closely monitor for signs and symptoms of extravasation, such as swelling, loss of blood return, and patient's report of pain or burning sensation. Confirming extravasation of vesicants during chemotherapy administration can be difficult because manifestations can vary from no immediate signs to pain, swelling, and loss of blood return, as well as differentiating extravasation from flare and recall reactions (Wickham, Engelking, Sauerland, & Corbi, 2006).
   d. Discontinue vesicant administration at the first sign of extravasation.
10. Vinca Alkaloid Vesicant Administration
   A. Should not be given as IVP.
   B. Vinca alkaloids will be diluted with 50 ml of 0.9% normal saline IVPB over 10 minutes.
   C. When administering a Vinca alkaloid through a peripheral IV site
      (1) Avoid using an IV pump or syringe pump to minimize pressure on the vein (Infusion Nurses Society, 2011).
         a. Free-flow method (side-arm technique)
            (i.) Attach the syringe with the drug at the injection port closest to the patient.
            (ii.) Aspirate for blood to verify IV patency.
            (iii.) Allow compatible IV solution to flow freely.
            (iv.) Slowly administer the chemotherapy agent, allowing the flush solution to dilute the drug. Unless otherwise indicated, administer the agent at a rate of 1–2 ml/min.
            (v.) If multiple agents are administered, flush with a compatible fluid between each agent and at the completion of the infusion"
            (vi.) Remain with the patient during the entire infusion (Sauerland, Engelking, Wickham, & Corbi, 2006).
      (2). Refer to (10.) for requirements of verification of blood return and signs of extravasation.
11. Non Vesicant drugs may be administered IV Push, IVPB or as an infusion through a central or peripheral IV line. If given IV Push, check for blood return after each 3 ml of drug injected.
12. Carmustine (BCNU) and Dacarbazine (DTIC) are to be administered last when giving multiple drugs to reduce venous irritability.
13. Paclitaxel (Taxol) is to be administered first if given with Cisplatin (Platinol), Carboplatin

(Paraplatin) or Etoposide (VP-16, VePesid, Etopophos), to decrease myelosuppression. If given with Doxorubicin (Adriamycin), Paclitaxel (Taxol) is to be given second.
14. Document chemotherapy/biotherapy administration in the MAR within the EMR.
15. Co-signature required by second registered nurse to complete the documentation for administration in electronic medical record.
16. Monitor for signs/symptoms of infusion reaction. Refer to policy 93.14, *Management of Hypersensitivity and/or Anaphylactic Reactions to Chemotherapeutic Agents*.

SECTION VI: ADMINISTRATION OF INTRAPERITONEAL (IP) CHEMOTHERAPY

EQUIPMENT LIST:

19g-20g 1"-2" non-coring right angle needle
CVC kit
Needleless injection site cap
10ml normal saline syringe (at least 2)

PROCEDURE

1. Wash hands. Check patient identification by name and date of birth. .
2. Have patient void prior to initiation of chemotherapy.
3. Palpate the port between the fingers and locate the septum.
4. Open VAD dressing kit. Remove Chloraprep without contaminating remaining supplies. Don sterile gloves. Use aseptic technique.
5. Create a sterile field using the sterile barrier.
6. Place equipment on sterile field.
7. Prime right angle needle with 1 ml 0.9% Sodium Chloride.
8. Clean the area surrounding the abdominal port site with hospital approved prep in a horizontal and vertical motion until you have covered an area five inches (12.7 cm). **NOTE: Do not touch skin during or after cleaning.**
9. Access implantable port with appropriate right angle needle. Attach needleless injection site cap to extension set on right angle needle. Push the needle firmly through the center of port perpendicular to port until it hits the back of the port chamber.
10. Place patient on complete bed rest in semi-fowler's position throughout administration of IP chemotherapy. Head of bed must be no higher than 30 degrees to prevent dislocation of right angle needle during infusion. NOTE: A flat position during infusion may increase pressure on diaphragm causing respiratory compromise/gastrointestinal upset in patients receiving IP infusions. After use of bedpan, nurse must assure proper needle positioning is maintained.
11. Per LIP order place 0.9% Sodium Chloride in room temperature water bath keeping outer manufacturing wrapping intact for approximately 15 minutes. NOTE: Warmed fluid is more comfortable for patient during infusion and decreases the incidence of cramping associated with IP infusions.
12. Prime IV tubing with attached Y port with warmed 0.9% Sodium Chloride. Attach to right angle needle extension. Infuse 150 ml of 0.9% Sodium Chloride (according to specific patient orders) as rapidly as possible via gravity. **NOTE: Infusion pumps are never used during IP infusions due to the incidence of needle dislocation from the high pressure of pump.**
13. Observe site of right angle needle for swelling, leakage, or redness. Observe entire

abdominal surface for unusual local swelling. Observe patient for complaints of pain, SOB, dyspnea, respiratory distress, and cramping. Stop infusion and notify LIP if any of above conditions occurs. Note: Migration of catheters or dislodging of right angled needle may occur.

14. If no untoward effects noted after completion of 0.9% Sodium Chloride. infusion, attach primed chemotherapeutic agent to free Y connector. Clamp 0.9% Sodium Chloride infusion line and infuse chemotherapy as rapidly as possible. Note: IP chemotherapy may take as little as 30 minutes or as long as 2-3 hrs. to infuse. If infusion takes longer than 3 hours, RN notifies LIP.
15. After infusion of chemotherapy complete, clamp chemotherapy tubing and open 0.9% Sodium Chloride tubing. Infuse additional 500 ml 0.9% Sodium Chloride (according to specific orders) as rapidly as possible. Flush right angled needle with 10 ml 0.9% Sodium Chloride.
16. Remove right angled needle from implantable port and dispose in chemo waste receptacle. Apply sterile gauze dressing or Band-Aid over site.
17. Reposition patient every 15 minutes from side to side for a total of 1 hour. Note: Repositioning disperses fluid throughout the peritoneal cavity.
18. Place patient on strict Intake and Output.
19. Document in EMR.

SECTION VIII: POST ADMINISTRATION

PROCEDURE:

Dispose of chemotherapy drugs and equipment Refer to Patient Care Services Policy 21:22, *Safe Handling of Chemotherapy*.

1. If a chemotherapy agent spills Refer to Patient Care Services Policy 21:22, *Safe Handling of Chemotherapy*
2. Monitor and document condition of IV site/surrounding tissue and patient's response to procedure.
3. Assess patient for side effects of chemotherapy and treat accordingly.
4. Alter nursing care plan as needed.
5. Institute chemotherapy precautions per PCS Policy, *Safe Handling of Chemotherapy*, # 21.22, for 48 hours after completion of chemotherapy.
6. All documentation to be done in the EMR.

RESPONSIBILITY:

It is the responsibility of nursing leadership or management member, as appropriate to implement, maintain, evaluate, review and revise this policy.

Policy # 21.13 Chemotherapy, IV, Adults
APPROVED DATE: Nursing Council - 1984; Cancer Committee - June 4, 1996; July 26, 1999
REVIEWED/REVISED DATE: 1986; 1987
Med/Surg Division, August, 1993; June 1996; July 7/9/98
SON Care Center & Medical Care Center Standards/Performance Improvement Committee, June 17, 1999
Medical/Surgical Leadership, February 6, 2013

Policy # 21.10 Administration of Chemotherapy
APPROVED DATE: Nurse Practice Education Council, July 9, 2004

History as of 2002:
APPROVED DATE:
Nurse Practice Education Council, February 8, 2002; July 9. 2004, April 14, 2006; November 9, 2007; December 14, 2007; December 10, 2010 (PCS policy #21.10 and PCS policy #21.13 were combined); March 8, 2013; April 12, 2013, February 14, 2014, February 13, 2015.
Nurse Practice Council, September 7, 2016, February 1, 2017

Allison Downes, RN
Chairperson, Nurse Practice Council

Ann Marie Leichman, RN
Vice President, Patient Care Services

REVIEWED/REVISED DATE:
A3 Oncology Practice Education Committee, November 2001; February 2013.
Medical Surgical Leadership, December 2001; February 6, 2013.
Heart & Vascular Institute Leadership, February 11, 2013.
Women's & Children's Services Leadership, February 4, 2013
LP Infusion Practice Education Committee, November 12, 2013; February 12, 2015
Thomas Rakowski MD, Director, Heme/Oncology, February 12, 2015
A3 and Luckow Oncology Services, 2016
A3 Oncology Practice Education Committee, August 1, 2016

REFERENCES:
1. Itano, Joanne & Taoka, Karen, (2015). Core Curriculum for Oncology Nursing (5th Edition). Elsevier Sanders, St. Louis.
2. Polovich, M., Whitford, J.M., & Olsen, M. (eds) (2014). Chemotherapy and Biotherapy Guidelines and Recommendations for Practice, (4th Edition). ONS Publishing Division, Pittsburgh, PA.

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