



University of Michigan
Health System

Disconnecting Chemotherapy in the Patient's Home

Maria Hagan RN, BSN, CRNI

1-800-862- 2731



University of Michigan
Health System

Introduction

- HomeMed has partnered with U of M's Comprehensive Cancer Center for many years & provided safe home chemotherapy for thousands of cancer patients.
- HomeMed's home infusion nurses have historically provided the home disconnections
 - However, the program is growing and we are now subcontracting nursing agencies to provide this service.
 - Welcome aboard!



- **Office hours M-F 8a-5:30p**
 - 1-800-862-2731-A receptionist will direct your call to the appropriate person. Just state your patient's name and reason for call.
 - Nurses/pharmacists are on call and available for you 24/7
 - In home nurses experienced in chemotherapy home disconnections.
 - **Some reasons to call HomeMed:**
 - Any question or concern about a HomeMed patient or their care.
 - Order clarification
 - Need more visits authorized for non-bundled patients
 - Supply management
 - Lab drop off site (if it is not a M lab) *lab work is not usually ordered for home chemotherapy patients because they get it done in the cancer center
- *If your patient is unable to tell you the disconnection time
- The patient/cg is instructed on their disconnection time & it is written on their Connection& Disconnection Documentation Sheet

- **Helpful Resources**

- Nursing Policy and Procedures
- Home Chemotherapy Manual
- Safe chemotherapy disposal
- M lab drop off sites
- Other
 - Link with patient resources

- <http://www.med.umich.edu/homecare/homemed/prof/index.htm>

- **The items to review are:**

- <http://www.med.umich.edu/homecare/homemed/pdf/253.036.pdf>
- <http://www.med.umich.edu/homecare/homemed/pdf/253.003.pdf>
- <http://www.med.umich.edu/homecare/homemed/pdf/253.029.pdf>
- http://www.med.umich.edu/homecare/homemed/pdf/HCS_ChemoBooklet.pdf
- http://www.med.umich.edu/homecare/homemed/pdf/Waste_FAQ_Patients.docx

Additional Chemotherapy Resources

- **Oncology Nurses Society**
 - <http://www.ons.org/>
- **Medline Plus**
 - <http://www.nlm.nih.gov/medlineplus/>

Education should be provided with each nursing visit

- Education that should be reinforced by the home care nurse can be found in the patient's home & on the HomeMed Website:
 - Home chemotherapy manual
 - HomeMed patient folder
 - Medication education sheets
 - Minimal skills the patient needs to know how to do:
 - » Wash hands
 - » Chemo precautions
 - » Clean work space
 - » Flushing the PICC *port-(preferred not required)
 - » Turning off the pump
 - » Read the pump screen/alarms
 - » Troubleshooting pump
 - » Close their clamps
 - » Changing batteries
 - » Safe waste disposal
 - » Contact information/ER plan

- Document your progressive teaching in your nursing note.
 - Please be specific
 - Document the pt/cg response (able to teach back, able to demonstrate)
 - Any barriers & actions to overcome

Documentation requirements

- Your completed nursing note should be **faxed** to HomeMed within **72 hours** of the disconnection visit.
 - Include time, drug, dose, patency of catheter, site evaluation, skilled nursing care provided and the **patient's response to therapy**.
- **Connection & Disconnection sheet:**
- It is very important that this paper is filled out by the home care nurse and placed back into the patient's fanny pack.
 - A HomeMed nurse will take the sheet when the patient returns to the cancer center for their next cycle.
 - The connection and disconnection sheet is used for important data collection.
 - An example is in your folder.

- Home chemotherapy drugs currently used are:
 - 5FU
 - Duration is variable.
 - 46 hours- several days
 - Adriamycin
 - Duration is usually 72 hours
 - 5FU/Adriamycin
 - Cycle
 - Usually every 2-4 weeks
 - Gemstar pump
 - Most patients have a port
 - Some patients may have a PICC

Home Continuous Infusion Chemotherapy Drugs

- **Adriamycin-doxorubicin** antineoplastic; antibiotic
 - Vesicant
 - an agent that has the potential to cause cellular damage or tissue destruction if infiltration into tissue occurs.
 - Requires daily blood return checks
 - Turns urine red; hair thinning/loss; lifetime max dose; can have cardiac implications, bone marrow suppression, n/v/d
- **Fluorouracil– 5-FU** antineoplastic; antimetabolite
 - Irritant
 - Agent capable of producing pain and inflammation at the administration site and along the path of the vein which it is administered, but does not cause tissue destruction.
 - n/v/d ; light sensitivity; hair loss; neutropenia, darkening of skin/nails, neuropathy of hands and feet
- **Handouts for each drug in your packet.**

Screening and education at the cancer center

- Nurses screen patients and their caregivers to make sure they are appropriate to receive chemo at home.
 - If inappropriate they will not be eligible to get chemo at home.
 - If you find the pt/cg to be inappropriate please contact the HomeMed office.
- Patient & their caregivers go through an extensive training program at the cancer center.
 - Return demonstration of:
 - Flushing of PICC
 - Bag change
 - Disconnection
 - They are given a very detailed Home Chemotherapy Manual and many other education sheets.
 - Please become familiar with these documents so they you can reinforce teaching appropriately.

- Typical Clinic Day
 - Port access
 - lab draw
 - doctor visit
 - chemo administration
 - Connection to home chemotherapy pump
 - discharged home
 - home care nurse referral to disconnect therapy
- New patient referral
 - Face Sheet
 - Visit Authorization
 - Chemotherapy MD orders
 - Patient Medication List
 - History/Dr. visit note
 - Port placement report/Xray
 - Discharge Form
 - ❖ Example is in your folder



- Connection to the home chemotherapy pump (Gemstar) is done by HomeMed nurses only
 - Chemo orders, pump settings, and the chemo bag are checked by 2 RN's
 - The patient's port is checked for patency
 - Flushing
 - Blood return check
 - The chemo is connected and the time verbally noted to the patient.
 - The time for disconnection is documented on the *Connection and Disconnection Sheet*.
 - This sheet is placed in the patient's fanny pack for reference.

Gemstar pump

- The Gemstar pump is programmed by a HomeMed clinician to infuse exact amount of chemotherapy ordered
 - Locked
 - Should be kept in the fanny pack while infusing along with:
 - Connection /Disconnection sheet
 - Syringes, batteries
 - Laminated cheat sheet/common alarms
 - The pump should be checked twice every day by the pt/cg to make sure it is working properly
 - Check that the bag is getting smaller
 - Look for moving arrows
 - The amount infused will increase

- To clean the pump dampen a cloth with a solution of 1 part household bleach to 10 parts of water and wipe the pump.
 - Pump sensors

Sources of high intensity electromagnetic radiation should be avoided such as X-ray machines and airport metal detectors.

The chemotherapy bag should be kept in the fanny pack. If the chemotherapy bag should leak inside the pack, the chemotherapy drug spill kit will need to be used.

If the patient wants bathe while the pump is infusing; place the pump and carrying pack in a resealable, plastic bag and set it next to the tub.

Showering is not recommended due to the risk of the port dressing coming off. A partial bath using the sink is better.

- HomeMed places the bag of chemotherapy into a heat sealed bag to prevent accidental leakage.
- In the patient's home *always* use the blue plastic backed absorbent pad as your work area.
- Chemotherapy gloves should be used and are provided with each delivery.
- Chemotherapy bags, unused drug, syringes, and any disposable equipment should be disposed of in the yellow puncture proof chemo-tainer provided by HomeMed.
- It usually takes a couple cycles to fill the chemo-tainer. If your patient needs a new one just call the HomeMed office.
- A Spill Kit is sent with initial delivery and should be kept with the patient during travels.
- If the Spill Kit is used remember to order another one.

- Patient/Family members/caregivers should be taught dangers of chemotherapy exposure, especially if children, pregnant or lactating women are in the home.
 - Chemotherapy spills should be cleaned immediately, using the Spill Kit.
 - Gloves, goggles, and mask.
 - Absorbent pad used to clean spill
 - Dispose in chemo-tainer
 - Spill area should then be cleaned with soap and water.
- Never flush chemotherapeutic agents down commode or drain.
- If chemo has spilled on the patient immediately wash the area with soap and water. Remove clothes and launder separately in hot water.
- Call HomeMed and your nurse supervisor if a spill or accidental exposure occurs.

- Safe handling guidelines for patients excretions should be used 48 hours post chemotherapy.
- Instruct caregiver/patient to wear disposable gloves when handling a urinal, bedpan, emesis basins and changing diapers.
- Close the toilet lid before flushing. Flush twice.
- Label any specimen collected within first 48 hours after therapy with cytotoxic bag. You can get these bags from your lab drop off site.

- Instruct your patient to close the top of the chemo-tainer
 - Reinforce with tape
 - Double bag
 - Place in trash can

- Information regarding chemotherapy disposal is in your folder and on the HomeMed website.



- **5-10 minute break**
- **Procedures**
 - Checking orders in the home
 - Vesicant procedures/extravasations
 - Blood return check
 - Chemo disconnection
 - Chemo Bag Change



University of Michigan
Health System

Checking Chemotherapy Orders In The Home

Procedure: Checking Chemotherapy Orders In The Home

- Since we do not have two RN's in the home to check orders, the double check can be done with the patient/caregiver.
- Review copy of HomeMed RX along with chemotherapy bag and written MD order if available.
 - Call HomeMed if you need further information from or if there is a question about the order



University of Michigan
Health System

Vesicant

Vesicant Administration Guidelines

1. Always obtain/ review MD order sent with delivery, identify patient with 2 identifiers. Ex: Name & date of birth
2. A central line is always required for vesicant or any chemotherapy in the home.
3. Prior to initiation of a vesicant, the VAD tip must be verified & checked for blood return; this will be done in hospital, the X-ray report is available in U of M's electronic record. Call HomeMed if you need this info.
4. Blood return checks must be done daily during vesicant administration.
5. A transparent dressing should be used so that insertion site can be observed.
 - ❖ The dressing does not have to be changed unless it becomes soiled or non-occlusive.
6. Assess the insertion site of the VAD, for signs of infection, patency and position.
7. Assess for venous obstruction, jugular vein distention and superficial collateral circulation. If any present, hold infusion and contact MD.

7. Monitor the infusion rate and check insertion site of the VAD for signs/symptoms of redness, pain, swelling, leakage or tenderness.
8. For a port, slight pressure should be applied to bend of needle to ensure needle is touching back of port.

Adriamycin Extravasation

- Agent – Adriamycin
- Antidote – **Cool compress**
- Local care – Topical cooling with ice packs or pad circulating ice water
- Application of cold inhibits vesicants cytotoxicity.

Procedure: Adriamycin Extravasations

- Assess for subjective/objective signs

Subjective – complaint of burning at/around IV site or along vein track, pain at IV site or along vein track, non-specific discomfort.

Objective – no blood return, swelling/bleb at IV site, slowed/stopped flow rate, blistering, red streaking along vein track, redness at IV site.

- If patient/caregiver able or if an RN is in the home at time of extravasation.
- **FIRST ACTION: STOP THE PUMP!**
 1. disconnect and clamp IV tubing, attach a new locking blunt cannula at the tubing end
 2. attach 10ml syringe to IV tubing
 3. aspirate back as much fluid (drug, tissue fluid, blood) as possible.
 4. **DO NOT FLUSH THE CATHETER. LEAVE THE NEEDLE IN PLACE.**
 5. Apply warm/cold compresses according to type of chemotherapy agent.
 6. Instruct patient to protect site from undue pressure and to elevate and not used effected extremity.
 7. Send the patient to the nearest ER, with the fanny pack /chemo pump/bag



Procedure: Adriamycin Extravasations

- If patient/caregiver unable to aspirate catheter or a nurse is not present, instruct patient/caregiver to
 - stop infusion pump
 - clamp IV tubing
 - apply cold compress as indicated



Procedure: Adriamycin Extravasations

- Instruct patient to immediately go to emergency room, Cancer Center Infusion Room or MD office for follow up care.
- Call MD
- Call HomeMed
- Notify your nurse manager or designee
- **Document: incident in Patient's medical record, with as much information as possible.**
 - Include:
 - date, time,
 - Measurements,
 - needle size, needle position,
 - type of catheter,
 - drug name, diluents, estimation of extravasated drug,
 - name of infusion device, infusion device program,
 - Patient response and condition
 - sequence of events and actions taken.



University of Michigan
Health System

Blood Return Check

Procedure: Blood Return Check Procedure

- ❖ Check blood return once Q 24 hrs during vesicant administration at home .
 - a. Wash hands, assemble equipment
 - b. Prepare work area, cleanse site with alcohol, working from the inside to the outside
 - c. Place absorbent pad under VAD connection and pump tubing
 - d. Prepare syringe with 5 – 10 ml Normal Saline
 - e. Apply chemotherapy gloves
 - f. Open fanny pack & place infusion device in stop position.
 - g. Close the slide clamp on the Chemotherapy IV line
 - h. Wipe VAD injection port using friction & an alcohol wipe x 15 seconds, insert prefilled normal saline syringe.

Procedure: Blood Return Check

- i. Slowly inject 1- 2 ml normal saline
- j. Pull back on syringe plunger until a blood return is seen, should be red and flow easily.
- k. Slowly Flush remaining normal saline into catheter, remove syringe
 - l. Wipe catheter injection site with alcohol
- m. Open the slide clamp on the chemotherapy IV line.
- n. Press Start on the GemStar pump, recheck program and infusion pump delivery.

Demonstration

10. If unable to obtain blood return, notify physician.
 11. Dispose of syringes, blunt cannula, gloves, alcohol wipes and absorbent pad in chemotainer.
 12. Document visit in Nursing Note.
- ❖ Please remember to document the time, pump settings, site assessment & patient's response to therapy.

- **Pump will indicate the volume infused and rate on the screen**
 - Disconnection can occur when 90% or more of the drug has infused.
 - For example if 200 ml's is the total drug volume to be infused, the patient may be disconnected when at least 190 ml's have infused.
 - If the pump alarms “infusion complete” before you arrive to the home you can have the patient take the batteries out of the pump and close the tubing clamp nearest their port and make the home visit a.s.a.p.



University of Michigan
Health System

Disconnecting Chemotherapy

Procedure: Discontinuation of Chemotherapy

1. Obtain/review MD order, identify patient using 2 identifiers, explain procedure.
2. Wash hands, assemble equipment.
3. Prepare work area, using alcohol working from inside to outside
4. Place chemo absorbent pad under VAD connection and pump tubing.
5. Prepare syringe of normal saline 5 – 10 ml and heparin 5ml 10 units/ml.
6. Apply chemotherapy gloves
7. Place infusion device in stop mode.
8. Disconnect locking blunt cannula from VAD injection port.
9. Wipe VAD injection port with alcohol wipe and insert prefilled normal saline syringe.

Procedure: Discontinuation of Chemotherapy

10. Inject 1-2 ml normal saline
 11. Pull back on plunger to check blood return
 12. Flush remaining normal saline using a push- stop method
 13. Flush with 5ml heparin 10units/ml using a push-stop method.
 14. Clamp vascular access device tubing while flushing the last 1ml of normal saline.
 15. Remove Huber needle
 16. Dispose of syringes, tubing, chemotherapy bag, gloves, chemo pads, alcohol wipes into chemo-tainer.
- Document in your agency's nursing note, include amount of chemotherapy infused from infusion device, time, site assessment and patient's response to therapy.
 - Document on the *Disconnection Note* and *place in fanny pack*



University of Michigan
Health System

Chemotherapy Bag Change



Procedure: Chemotherapy bag change

1. Obtain/ review MD order, Identify Patient using 2 identifiers, explain procedure to patient.
2. Wash Hands assemble equipment
3. Prepare work area, cleanse with alcohol working from inside to outside.
4. Place absorbent pad under chemotherapy bag
5. Apply chemotherapy gloves
6. Place infusion device in Stop mode
7. Remove old Chemotherapy bag, keep bag upside down so any remaining chemo does not spill out.
8. Dispose of old bag in chemotainer
9. Cleanse injection site of **Pha-Seal** with alcohol wipe x15 seconds using friction.

10. Spike new chemotherapy bag
 11. On pump push change, select #1 for new container
 13. Restart infusion by pushing start, verify pump infusing at prescribed rate.
- ❖ Please remember to document time of bag change, amount infused, site assessment and patient's response to therapy.

Demonstration

- MD
 - extravasation
 - no blood return for vesicant
 - side effects/ adverse reactions
- HomeMed 1-800-862-2731
 - 24/7, Pharmacist and Nurse always on call
 - pump problems
 - chemotherapy bag, equipment or supply problems
 - Coordination of care



Thank you

GO BLUE !