



## Clinical Practice Guidelines

### Guidelines for Personnel Dealing with Chemotherapy/Cytotoxic Medications

**Overview:** Medications used in the treatment of cancer are considered hazardous to healthcare workers. The term “hazardous” describes medications that need special handling because of health risks that may result from exposure. These risks are a result of the inherent toxicities of the medications. According to the Occupational and Safety Health Administration (OSHA), safe levels of occupational exposure to hazardous agents cannot be determined, and no reliable method of monitoring work-related exposure exists. Therefore, it is imperative that those who work with hazardous medications adhere to practices designed to minimize occupational exposure (Oncology Nursing Society, 2009).

**Target Audience:** Radiology Nurses, Radiology Technologists, Radiologists, Radiology Administrators, Radiology Residents & Fellows, Medical Students

#### Content/Strategies

##### A. Personal Protective Equipment (PPE)

- Patients who have received chemotherapy in the past 48 hours should have a “chemotherapy precautions” sign posted outside their door. If they come to the radiology department this should be communicated to you by way of your institution’s hand-off communication process.
- Personnel dealing with blood, vomitus, or excreta from patients who have received chemotherapy in the past 48 hours should wear chemotherapy approved gloves (**double gloves are recommended for all handling activities**), disposable chemotherapy gown, and eye and face protection if splashing is expected.
- No protective equipment is needed for ordinary patient contact if you are not dealing with bodily excretions.
- Hands should be washed after removal of gloves or gown and after contact with above substances. Also flush the toilet twice when disposing of urine, vomitus, feces, etc.

##### B. Linen

- Linen contaminated with chemotherapy medication should be placed in the institutional designated chemotherapy hazardous waste container.
- Linen contaminated with body fluids from patients who have received chemotherapy in the past 48 hours may be bagged in a regular linen bag and placed with dirty linens to be laundered.

##### C. Accidental Exposure (Overt Contamination of Gloves or Gown or Direct Skin or Eye Contact)

- Immediately remove gloves or gown.
- Wash affected skin immediately with soap such as Ivory taken from clean supply room (**do not use germicidal cleanser [e.g., Cida-State or soaps with chlorhexidine gluconate [CHG]]**) and water. Report to Employee Health or the Emergency Department immediately if skin reaction occurs, or follow your hospital’s policy guidelines.
- For eye exposure flush affected eye(s) with water or isotonic eyewash (saline) for a minimum of 15 minutes. Go to Employee Health or the Emergency Department once the flush is completed, or follow your hospital’s policy guidelines.

D. Transporting Chemotherapy Medications (Picking Up Chemotherapy Medications from Pharmacy)

- All chemotherapy medications should be in a plastic bag that is sealed and marked as chemotherapy.
- You need to wear chemotherapy approved (nitrile) gloves when carrying chemotherapy medications.
  - If you drop the chemotherapy medication and the bag splits or the glass breaks:
    - Call your unit or area for help and tell them to bring protective equipment, the “chemotherapy spill kit,” and whatever else they think they need. (Your hospital may dictate a slightly different scenario, such as calling security.)
    - Block off contaminated area.
    - Follow procedure for “large spills.”
- When the chemotherapy medication arrives in the radiology department it needs to be put in a “chemotherapy safe zone” (placed on a chemotherapy pad) until it is placed on the field, given to the team to administer, or the nurse hangs it for an infusion. The pad is to be disposed of in the chemotherapy waste bin.

E. Administration of Chemotherapy in the Radiology Department

- The chemotherapy medication should be placed on a separate table to decrease the risk of contamination.
- Use only metal stopcocks during these procedures.
- All personnel must wear appropriate PPE when preparing and administering the chemotherapy medication. This includes the following:
  - A protective gown of low-permeability, lint free fabric with a solid front (back closure) and knit or elastic cuffs.
  - Disposable non-latex (nitrile) chemotherapy approved powder-free gloves. The permeability of the gloves increases with time; therefore, gloves should be changed every 30 minutes or immediately if they are damaged, torn, or contaminated with the drug. **Double glove prior to chemotherapy administration.**
  - A plastic face shield should be worn when the possibility of eye, mouth, or nasal splashing or aerosolization exists.
- A chemotherapy order form or approved pre-printed orders should be used to process chemotherapy orders.
- Two individuals in the interventional radiology suite (e.g., two registered nurses or registered nurse and physician) must verify the chemotherapy order prior to administration. The following is to be checked against the order: patient’s name, medical record number or date of birth, drug(s), dose, route, date and time, solution, and expiration date.
- Both individuals involved in the checking process need to put their signatures and correct date on the order sheet.
- All empty chemotherapy tubing, bags, glass containers, or anything that has potentially come in contact with the chemotherapy agent should be disposed of in the chemotherapy waste bin. This includes bedpans or urinals that the patient may have used during the procedure.

**NOTE:** Please refer to your hospital’s policy regarding administration of chemotherapy. Your institution may require that two chemotherapy-certified registered nurses (RNs) check the chemotherapy medication that is being administered via lumbar puncture or intra-arterial (IA) chemotherapy for brain tumors. The RNs also perform the charting and handle the handoff and disposal.

F. Procedure for Clean Up of Spills

- Alert your supervisor (e.g., charge nurse or lead technologist) that a spill has occurred.
- Spills should be cleaned up immediately by an RN or radiology technologist (RT) competent in chemotherapy/cytotoxic spill procedures: wearing a disposable gown, double (two pairs) chemotherapy approved (nitrile) gloves, respiratory protection NIOSH-approved respirator, and chemical splash goggles. (All of these are provided in the chemotherapy spill kit.)
- Actual Procedure
  - Assess for exposure of any individual, and isolate the individual from the spill. If the individual's clothing or skin has made contact with the chemotherapy medication, immediately wash the area with soap and water (see Accidental Exposure section).
  - Obtain the chemotherapy spill kit and put on the gown, gloves, respirator, and goggles.
  - Limit access to the area and post a warning sign if necessary.
  - Contain the spill using spill control pillows found in the kit.
  - Wipe up liquids using absorbent gauze pads or spill control pillows.
  - Any glass fragments should be picked up using a small scoop (provided in the kit) and placed in the puncture proof institutional designated chemotherapy hazardous waste container.
  - Place waste materials in the heavy-duty waste disposal bag (provided in the kit) and seal the bag. Place the sealed bag inside another bag and label the outer bag with a hazardous waste label. For the moment leave the outer bag open.
  - Clean spill area thoroughly, beginning with the least contaminated area and finishing with the most contaminated area. Use a detergent solution (obtainable from Environmental Services) followed by water.
  - Use fresh detergent solution to wash any reusable items used to clean up the spill and items located in the spill area (e.g., volumetric pump). Use water to rinse the washed items. Repeat the washing and rinsing.
  - Remove PPE and place in unsealed waste bag.
  - Seal the outer waste bag and place in the **institutional designated chemotherapy hazardous waste container**.
  - It is the RN's or RT's responsibility to clean up chemotherapy spills. Paraprofessionals are there to assist if needed.
  - Hint—The permeability of gloves increases with time (absorbs more substances through gloves); therefore, gloves should be changed every 30 minutes or immediately if torn.

## Reference

Oncology Nursing Society. (2009). *Chemotherapy and biotherapy guidelines and recommendations for practice* (3<sup>rd</sup> ed.). Pittsburgh, PA: Author.

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