
بسم الله الرحمن الرحیم

خودمراقبتی پرستاران در هنگام کار با داروهای شیمی درمانی

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“We need to really anchor that into our community,” : “Unless you take good care of yourself, you can’t be there to take good care of your patient.”

A study from the University of Michigan Rogel Cancer Center sought to improve nurses' handling of chemotherapy by delivering an educational intervention with quarterly reminders and tailored messages. But despite the strong study design and quality intervention, it did not increase use of protective gear.

- **Michigan university:** Exposure to chemotherapy can create hazards for nurses, pharmacists as they deliver lifesaving care to patients, but use of protective devices remains low.

- Khadije abbasi et al (2019): Protection behaviors for cytotoxic drugs in oncology nurses of chemotherapy centers in Shiraz hospitals, South of Iran

Conclusions: There is deficiency!!!!!!!!!!!!! in the understanding and related protection practices of clinical nursing staff vocationally exposed to cytotoxic drugs. It is recommended that all clinical nursing staff should receive full occupational protection training about these matters and the authorities provide standard conditions of oncology wards.

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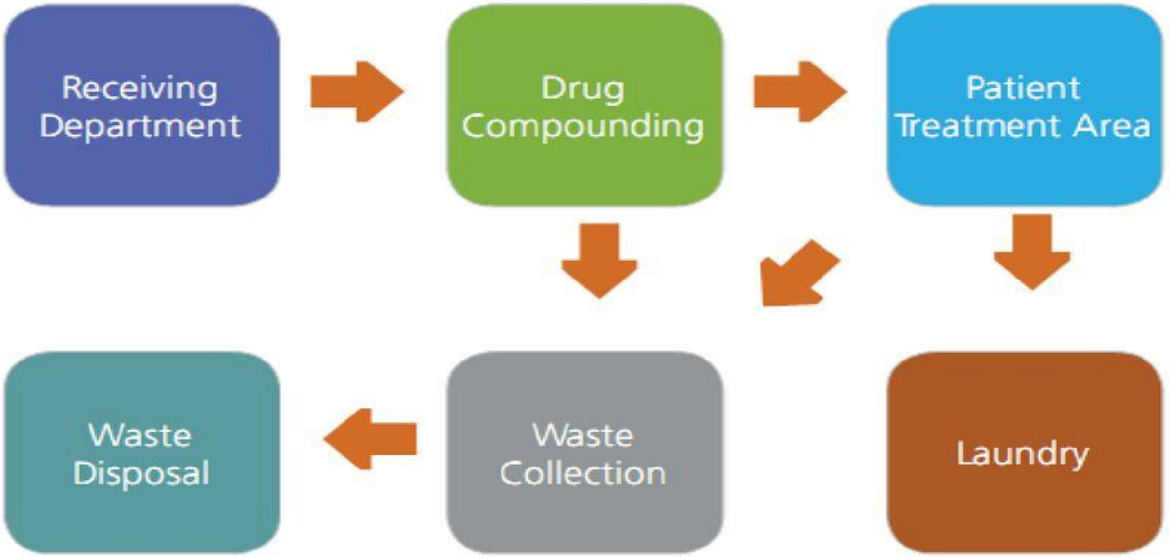
ONS president: Researchers for two studies investigated the habits and practices of oncology nurses using personal protective equipment (PPE) and found serious concerns about nurses exposing themselves and others to the effects of hazardous drugs by failing to follow safe handling practices that ONS has recommended for years. A randomized controlled trial showed that "despite four decades of evidence to suggest adverse health effects for workers who handle hazardous drugs, nurses persistently do not wear PPE as recommended." Similar findings were noted in a study about antineoplastic drug administration by pregnant and nonpregnant nurses.

Why Aren't Nurses Adhering to PPE Requirements?

In their article in the June 2019 issue of the *Clinical Journal of Oncology Nursing,* Menonna-Quinn, Polovich, and Marshall shared the results of their study investigating oncology nurses' self-reported use of PPE and the reasons nurses don't always adhere to all of the guideline requirements.

The authors recommended the need for increased education about PPE and the importance of self-protection during oncology nurses' early training, continued PPE education during orientation, and PPE requirement reviews during annual competencies. "Ensuring that nurses understand when to use and when to wear PPE during all phases of chemotherapy administration can protect the healthcare providers administering hazardous drugs and the patients receiving the therapy," they said

Flow of Hazardous Drugs through the Hospital or Clinic



Personal protective equipment (PPE) should be used to protect personnel from exposure during handling of HDs. PPE includes gloves, gowns, goggles for eye protection, a full face shield for head protection, and respiratory barrier protection.

Regular exam gloves are not recommended for use as standard protocol for handling chemotherapeutic agents. However, as an expedient, wearing two pairs of powder-free nitrile or latex gloves can be used as a last resort. Vinyl gloves do not provide protection against chemotherapy. For receiving HDs, one pair of ASTM-tested chemotherapy gloves may be worn. When administering, managing, and disposing of HDs, two pairs of ASTM-tested chemotherapy gloves should be worn with the inner glove under the gown cuff and the outer glove over the cuff. If a glove becomes contaminated or if there is a breach in the glove, it should be removed and discarded promptly, while carefully avoiding contamination of the handler's skin or nearby surfaces.

Disposable gowns made of polyethylene-coated polypropylene or other laminate materials offer the best protection.

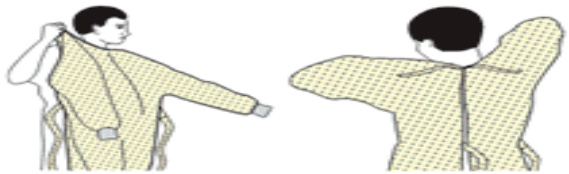
Eye, face, and respiratory protection is mandatory when working with HDs outside of a clean room or isolator cabinet, or whenever there is a probability of splashing or uncontrolled aerosolization of HDs. A full face mask is a suitable alternative to goggles, although it does not form a seal or fully protect the eyes. A NIOSH N95 respirator mask is suitable for most situations, with the exception of large spills that cannot be contained by a commercially available spill kit.

SEQUENCE FOR PUTTING ON PERSONAL PROTECTIVE EQUIPMENT (PPE)

The type of PPE used will vary based on the level of precautions required, such as standard and contact, droplet or airborne infection isolation precautions. The procedure for putting on and removing PPE should be tailored to the specific type of PPE.

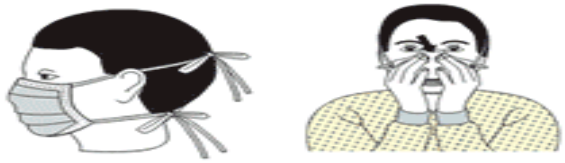
1. GOWN

- Fully cover torso from neck to knees, arms to end of wrists, and wrap around the back
- Fasten in back of neck and waist



2. MASK OR RESPIRATOR

- Secure ties or elastic bands at middle of head and neck
- Fit flexible band to nose bridge
- Fit snug to face and below chin
- Fit-check respirator

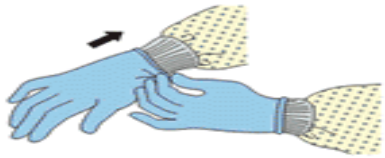


3. GOGGLES OR FACE SHIELD

- Place over face and eyes and adjust to fit

4. GLOVES

- Extend to cover wrist of isolation gown



USE SAFE WORK PRACTICES TO PROTECT YOURSELF AND LIMIT THE SPREAD OF CONTAMINATION

- Keep hands away from face
- Limit surfaces touched
- Change gloves when torn or heavily contaminated
- Perform hand hygiene

CDC

PPE should be removed in an order that minimises the potential for cross contamination.

The order of removal of PPE is as follows:

1 **Gloves –**
the outsides of the gloves are contaminated

Clean hands with alcohol gel

2 **Gown –**
the front of the gown and sleeves will be contaminated

3 **Eye protection -**
the outside will be contaminated

4 **Respirator**
Clean hands with alcohol hand rub. Do not touch the front of the respirator as it will be contaminated

5 Wash hands with soap and water

PPE should be removed in the following order: chemotherapy gown (touching the outside of the gown, then rolling the outside inward to contain HD trace contamination), goggles and face shields (touching only the outside without making contact with the face), then chemotherapy gloves (touching the outside of the gloves away from the exposed skin while attempting to roll the glove outside-in).

Closed system transfer devices (CSTDs) are another type of PPE that can be used for any cytotoxic chemotherapy agent (although not necessarily for all HDs) during preparation and administration. Traditional needle and syringe techniques for mixing HDs create the potential for droplet or aerosol contamination. CSTDs prevent mechanical transfer of external contaminants and prevent harmful aerosols that are created by mixing HDs from escaping and exposing personnel. CSTDs are commercially available from a number of companies.


Safe. Simple. Closed.

Male and female employees who are immunecompromised or attempting to conceive and women who are pregnant or breastfeeding should avoid working with chemotherapy agents.

Employees or pet owners who will be exposed to the patient's waste (urine, feces, vomit, blood) within 72 hr of chemotherapy administration (sometimes longer for some drugs) should wear proper PPE.

consider these ways to help avoid exposure and cross contamination:

- Do not wear contaminated gloves to use the phone, type on a computer keyboard, program IV pumps, open doors and cabinets, or touch body parts (e.g., face, adjusting a mask)

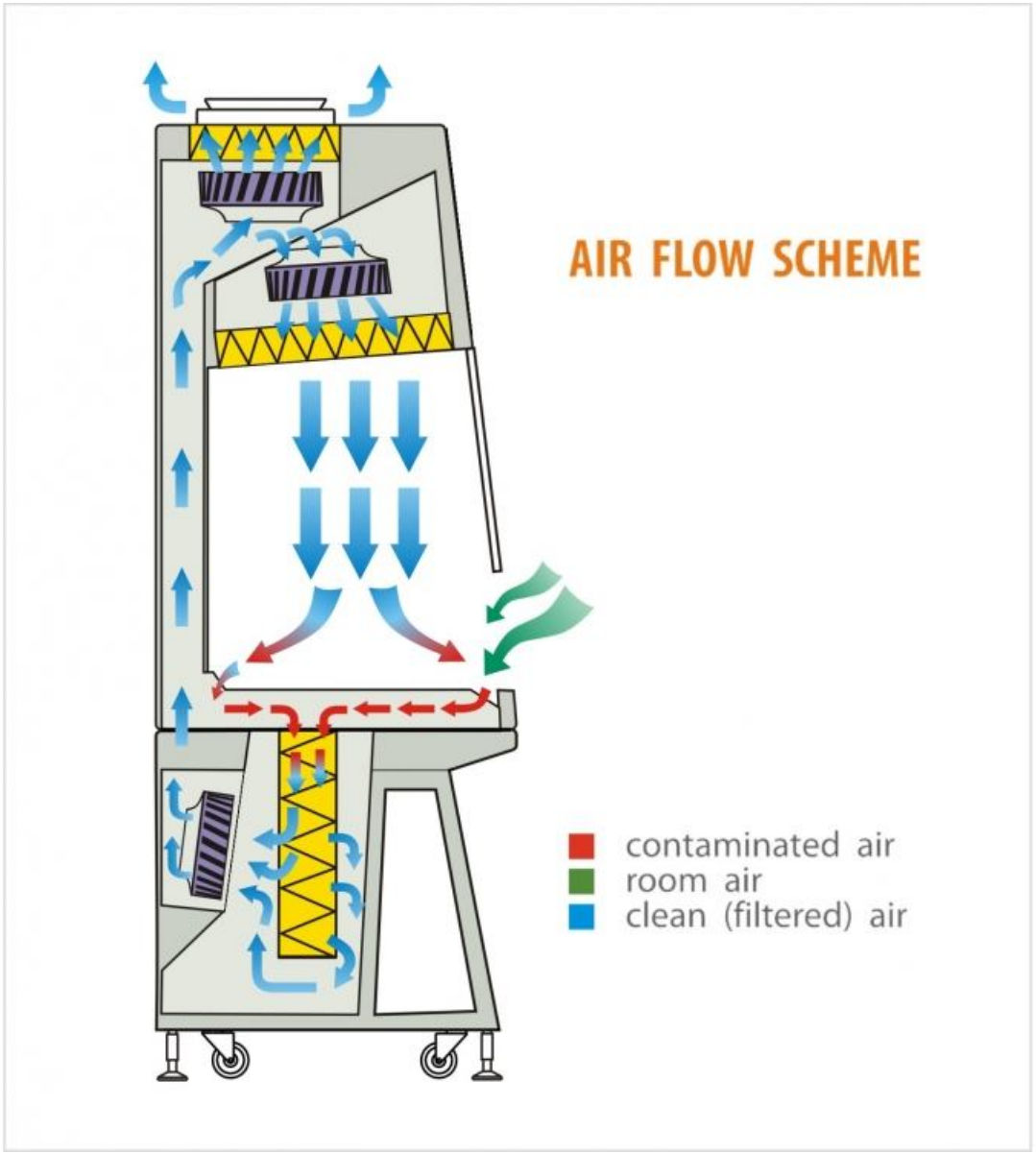
- Inspect PPE for defects or tears before use Do not reuse gloves, gowns, shoe covers, or any other disposable PPE
- Change gloves after 30 minutes of wear, if damaged, or contaminated

- Remove shoe covers when leaving compounding area or after cleaning a spill
- Do not use eyeglasses as your sole means of eye protection; use goggles with side shields or a face shield when splashing is a possibility

- Dispose of all disposable PPE in a hazardous waste container after use
- For non-disposable PPE (i.e., respirators, eye, and face protection), decontaminate and clean after use and take care to properly dispose of the materials used to decontaminate this equipment

The Class 2 Biological Safety Cabinet has three key features:

- A front opening with carefully maintained continuous inward airflow.
- HEPA-filtered, vertical, unidirectional airflow within the work area.
- HEPA-filtered exhaust air to the room or the exhaust connected to an external extract system


AIR FLOW SCHEME
contaminated air
room air
clean (filtered) air


THANKS FOR YOUR
ATTENTION
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