ADMINISTRATION OF ANTINEOPLASTIC HAZARDOUS DRUGS (CHEMOTHERAPY)

Rachael Crickman, MN, RN, AOCNS
Seth Eisenberg, RN, ASN, OCN, BNTCN
Sarah Reyes, CPhT
Karen Bowman, MN, RN, COHN-S

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The information contained in these slides is designed to review the basic components of safe handling of chemotherapy [antineoplastic hazardous drugs (HDs)] as recommended by NIOSH.

Differences in handling procedures may be warranted for non-antineoplastic HDs (e.g. hormones).

Please refer to your institution’s policies and procedures for specific details.

For information pertaining to the Washington state law, refer to the Labor and Industries website http://www.lni.wa.gov/Safety/Topics/AtoZ/HazardousDrugs/
ANTINEOPLASTIC
HAZARDOUS DRUGS
(CHEMOTHERAPY)

• Familiarize yourself with medications to be handled as hazardous drugs, as defined by NIOSH.

• Refer to your institution’s specific list of hazardous drugs as handling will differ depending on the agent and route of administration.

• IV hazardous drugs should be prepared in a biologic safety cabinet
CLOSED SYSTEM TRANSFER
DEVICES (CSTDs)
(CHEMOTHERAPY)

- These devices are designed to reduce exposure to hazardous drugs during preparation, administration, and disconnection.
- While not required in the Washington State law, use of these devices allow for significant differences in administration practices while maintaining worker safety.
- Where applicable, these differences are described in this reference.
UPON RECEIPT OF IV HDS
CHEMOTHERAPY

• Visually inspect that the HD arrives for administration:
  • in a sealed plastic bag
  • spiked in pharmacy with tubing pre-primed using a neutral solution OR
  • spiked in pharmacy with CSTD spike OR with a CSTD “dry spike”
CSTD SPIKE AND CSTD DRY SPIKE EXAMPLES

CSTD Spike Connectors

CSTD Dry Spikes
PERSONAL PROTECTIVE EQUIPMENT (PPE) (CHEMOTHERAPY)

- PPE is required for handling, administration and disposal of HDs
- Proper PPE for HDs includes:
  - Chemotherapy resistant gown
  - Chemotherapy resistant gloves (ASTM D6978 - 05(2013))
- Limit glove wear time to 30 minutes
- Ensure glove covers cuff of gown
- A full face shield or eye protection should be worn if there is potential for splash (i.e., high risk procedures such as intravesicular administration)
- Refer to NIOSH guidelines for further details

http://www.astm.org/
Outer glove covering cuff of chemotherapy gown
DONNING PPE (CHEMOTHERAPY)

• Wash hands either with soap and water or gel
• Don PPE
  • Don gown
  • Don gloves
    • While not required by Washington State law, ASHP & ONS recommend double gloving for administration

**IV ADMINISTRATION (CHEMOTHERAPY)**

- Ensure hazardous drug spill kit is readily available prior to administration
- Do not spike drug at bedside (unless CSTD dry spike used)
- Remove gloves before touching IV pump
- After infusion, do not disconnect secondary tubing from primary line (unless CSTD is used)
IV PUSH ADMINISTRATION
(SYRINGE CHEMOTHERAPY)

- Visually inspect that the HD syringe arrives for administration:
  - In a sealed plastic bag
  - No needles attached
  - Use of a CSTD is recommended but not required

- To avoid inadvertent contamination, do not expel air from syringe
RECOMMENDED SEQUENCE FOR DOFFING PPE
(CHEMOTHERAPY)

1. Doff gloves (outer pair when double-gloved)
2. Face protection (and/or respirator for spills)
3. Gown
4. Inner pair of gloves (when double-gloved)
5. Dispose of PPE
6. Wash hands with soap and water (do not use hand sanitizers)

M. Polovich, PhD, RN, AOCN, Editor “Safe Handling of Hazardous Drugs”
DOFFING PPE
(Chemotherapy)

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ORAL AND TOPICAL CHEMOTHERAPY

- Do not crush or manipulate outside of a biologic safety cabinet
- Work with pharmacy for oral agents that are to be administered via NG route
- Gloves should be worn when handling oral HDs
- Gown and gloves are recommended by ONS and ASHP for topical administration

Polovich, M. “Safe Handling of Hazardous Drugs,” Oncology Nursing Society, 2011
**SPILLS (CHEMOTHERAPY)**

- Develop / define a spill response procedure including first aid and decontamination
- Refer to your institution’s policy and procedure for spill management. Policy must include:
  - Who is authorized to respond and under what circumstances
  - Location and use of spill kits
  - Procedure for containment, including signage
  - Proper PPE, including respiratory protection
  - Reporting and evaluating circumstances of spill
  - Restricting access to spill area
  - Waste disposal
RESPIRATORY PROTECTION FOR CHEMOTHERAPY SPILLS

• Minimal data exists regarding vaporization of HDs at room temperature

• The following agents have been identified:
  • Carmustine
  • Etoposide
  • Cyclophosphamide / Ifosfamide
  • Thiotepa
  • Nitrogen Mustard
  • 5-FU
  • Cisplatin

RESPIRATORY PROTECTION FOR CHEMOTHERAPY SPILLS

• Although no studies have been published regarding optimal respiratory protection for spilled HDs, NIOSH requires adequate protection be available.

• Surgical masks do not offer protection, and N95 respirators are not effective for vapors.

RESPIRATORY PROTECTION FOR CHEMOTHERAPY SPILLS

• Therefore, one of the following are recommended to deactivate chemicals:
  
  • A full-face combination respirator (p100, OV and a carbon layer)
  
  • PAPR (powered air purifying respirator) with (p100, OV and a carbon layer) cartridge
  
• Note: All respirators require fit testing and a medical evaluation questionnaire
  
• Refer to institution’s policies and procedures

http://multimedia.3m.com/mws/media/639110O/3m-adflo-respirator-selection-guide.pdf?fn=Respirator%20Selection%20Guide%20Final
DISPOSAL OF PPE AND CHEMOTHERAPY

- After administration, HD bags and tubing should be disposed of in containers specifically designated for hazardous drugs.
- Refer to institution’s policy on HDs for:
  - Disposal of PPE
  - Disposal of partial or intact doses