Hazardous Medications

Objective

- Review background to safe handling of hazardous drugs.
- Review recommended guidelines from United States Pharmacopeia (USP).
- Review CMC standards and policies regarding handling of hazardous drugs.
- Review exposure procedures.

Hazardous Medications

- USP chapter 800, released in 2019, set guidelines for healthcare organizations for safe handling of hazardous drugs.
- These guidelines provide standards to minimize risk of exposure to healthcare personnel, patients and the environment.
- This module will provide education about these guidelines and how we can protect ourselves, our colleagues, our patients and our environment.

Who determines which medications are hazardous?

The National Institute for Occupational Safety and Health (NIOSH) publishes a list of medications potentially hazardous to healthcare workers

Carbamazepine, phenytoin, spironolactone, etc.

Resource Conservation and Recovery Act (RCRA) established a list of chemicals and medications which are hazardous to the environment

Insulin, benzocaine spray, nitroglycerin drips, etc.

Some medications are both hazardous to healthcare workers AND require proper disposal to protect the environment

Chemotherapy, warfarin, etc.

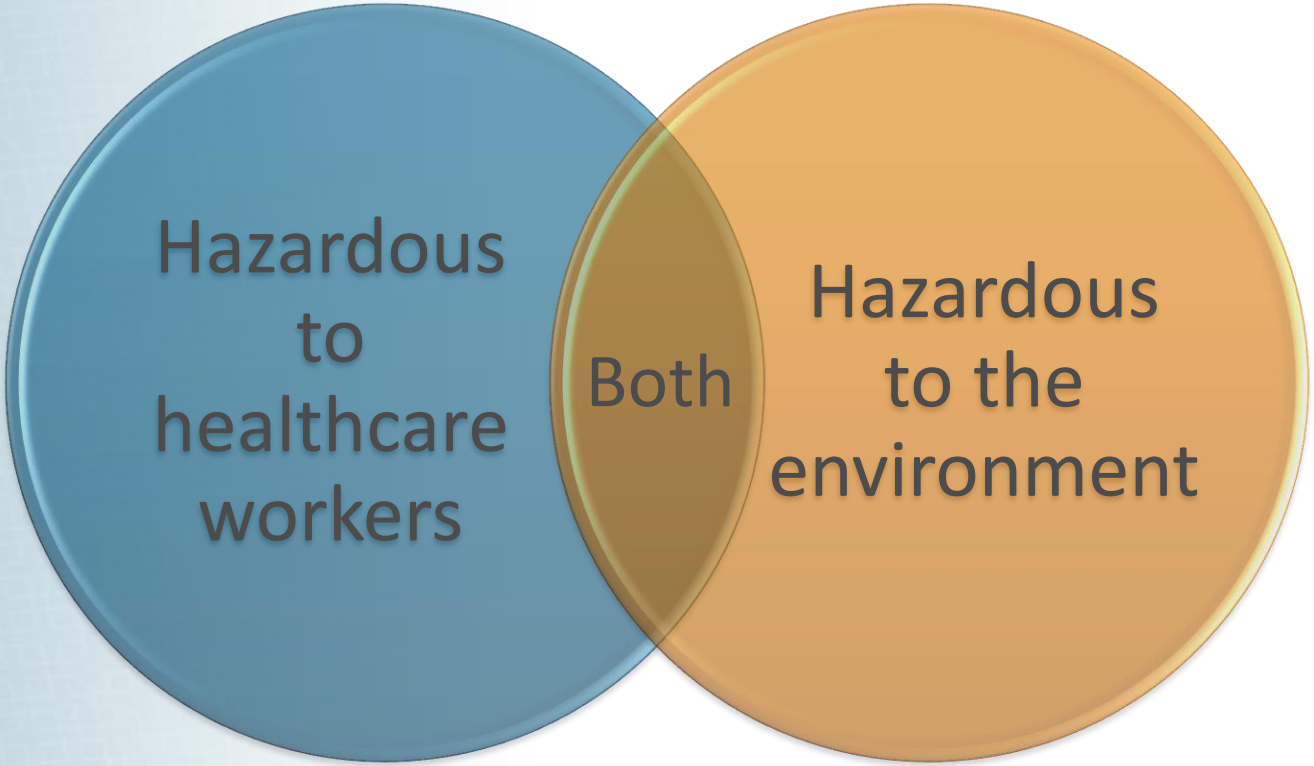
What is a hazardous drug?

Any drug identified as hazardous or potentially hazardous by the NIOSH on the basis of at least one of the following six criteria:

1. Carcinogenicity
2. Teratogenicity or developmental toxicity
3. Reproductive toxicity in humans
4. Organ toxicity at low doses in humans or animals
5. Genotoxicity
6. New drugs that mimic existing hazardous drugs in structure or toxicity

Hazardous Medication Categories

- Two basic groups of hazardous medications:



What is the risk?

- Health risk depends on how much exposure a healthcare worker has to these drugs and how toxic they are

How do we protect ourselves, our colleagues, our patients and our environment?

- **Healthcare workers** are protected from exposures to hazardous drugs through **proper protective equipment** and use of engineering and administrative controls
- The **environment** is protected by **proper disposal**

Safe Handling Standard Operating Procedures

- Reference the *Safe Handling of Hazardous Drugs* policy which includes standards for:
  - Receiving & storage
  - Pharmacy practices
  - Exposure
  - Spills
  - Disposal
  - PPE and training

Medication Preparation & Administration

- Antineoplastic Hazardous Medications (NIOSH Group 1) are not stored in Pyxis.
- Do not cut, open, crush or otherwise manipulate any hazardous medication without first contacting the pharmacy.
- Hazardous, potentially carcinogenic and/or teratogenic medications require special handling and proper PPE to limit staff exposure and reduce health risks.

What PPE do I wear?

Person Protective Equipment for Hazardous Medications			
Formulation	Activity	Risk Level	PPE & Engineering Controls
Intact tablet or capsule	Administration from unit-dose package	Risk Level 1	Single pair gloves*
Altered tablet or capsule	Administration	Risk Level 2	Single pair gloves* Eye/face protection if vomit or potential to spit up[≡]
Oral Liquid Drug or Feeding Tube	Administration	Risk Level 3	Double long cuffed gloves Protective impervious gown Eye/face protection if vomit or potential to spit up[≡]
Subcutaneous, IV or IM injection	Administration from a prepared syringe/solution	Risk Level 3	Double long cuffed gloves Protective impervious gown Eye/face protection if product could splash[≡] Respiratory protection if inhalation potential CSTD if the dosage form allows
Topical Drug (ophthalmic, vaginal gel, vaginal insert, vaginal suppository, transdermal gels and patches, implants)	Administration	Risk Level 4	Double long cuffed gloves Protective impervious gown Eye/face protection if product could splash[≡] Respiratory protection if inhalation potential
Solution for irrigation	Administration (bladder, HIPEC, limb perfusion, etc.)	Risk Level 5	Double sterile chemotherapy gloves Protective impervious gown Eye/face protection Respiratory protection
Powder/solution for inhalation/aerosol treatment (nasal spray, nasal gel)	Administration	Risk Level 5	Double long cuffed gloves Protective impervious gown Eye/face protection if product could splash[≡] Respiratory protection if inhalation potential

After Removal of PPE… Wash Your Hands!

Do not use alcohol gel!

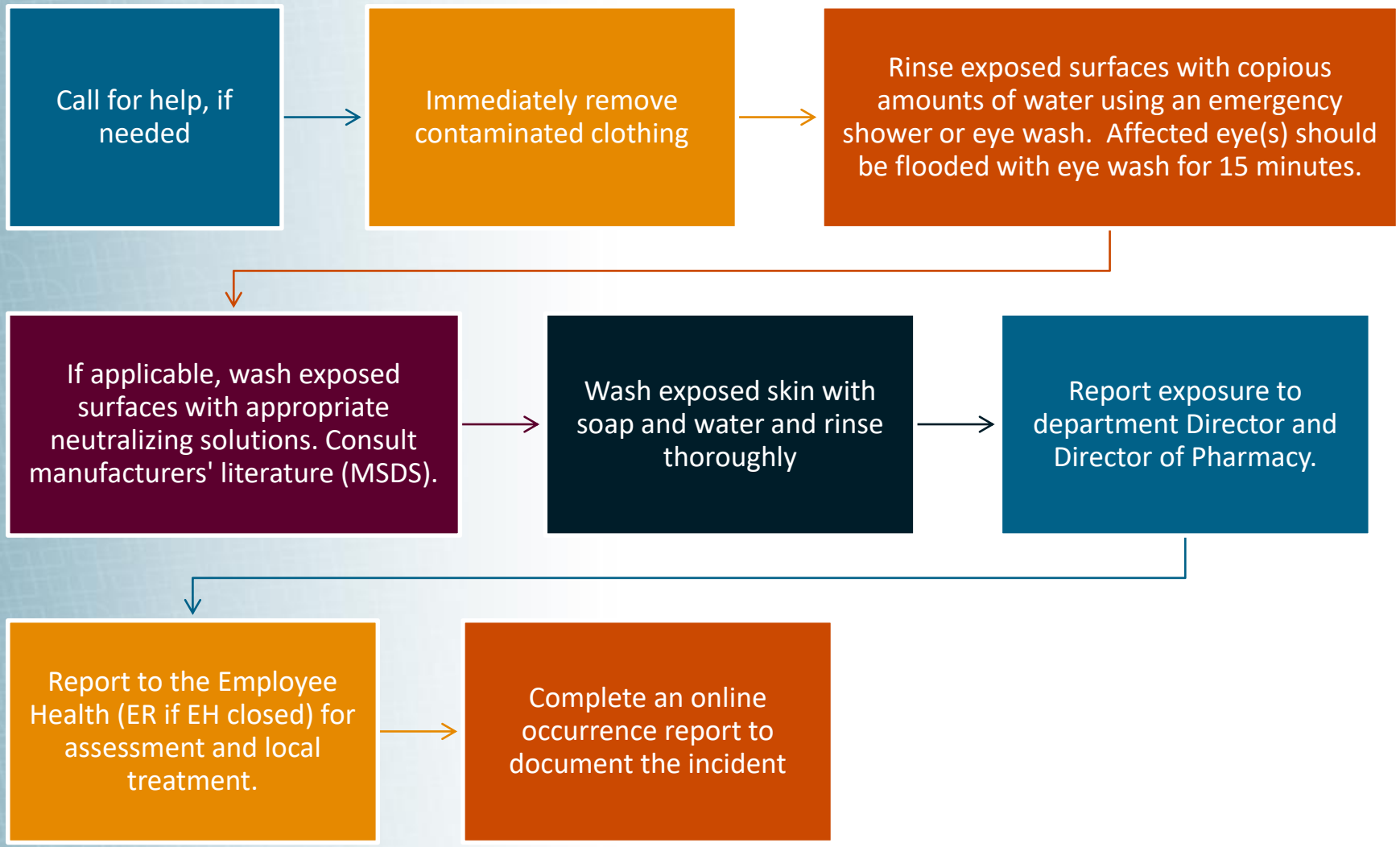
Management of Body Fluids

- All patients that have received hazardous medications have potential metabolites in their body fluids.
  - For all high risk activities where there is a risk of body fluids splashing, it is recommended that double long cuff gloves and low permeability (chemotherapy) gown is worn.
  - Face and eye protection (shield and goggles) should also be worn if high risk of splash is anticipated

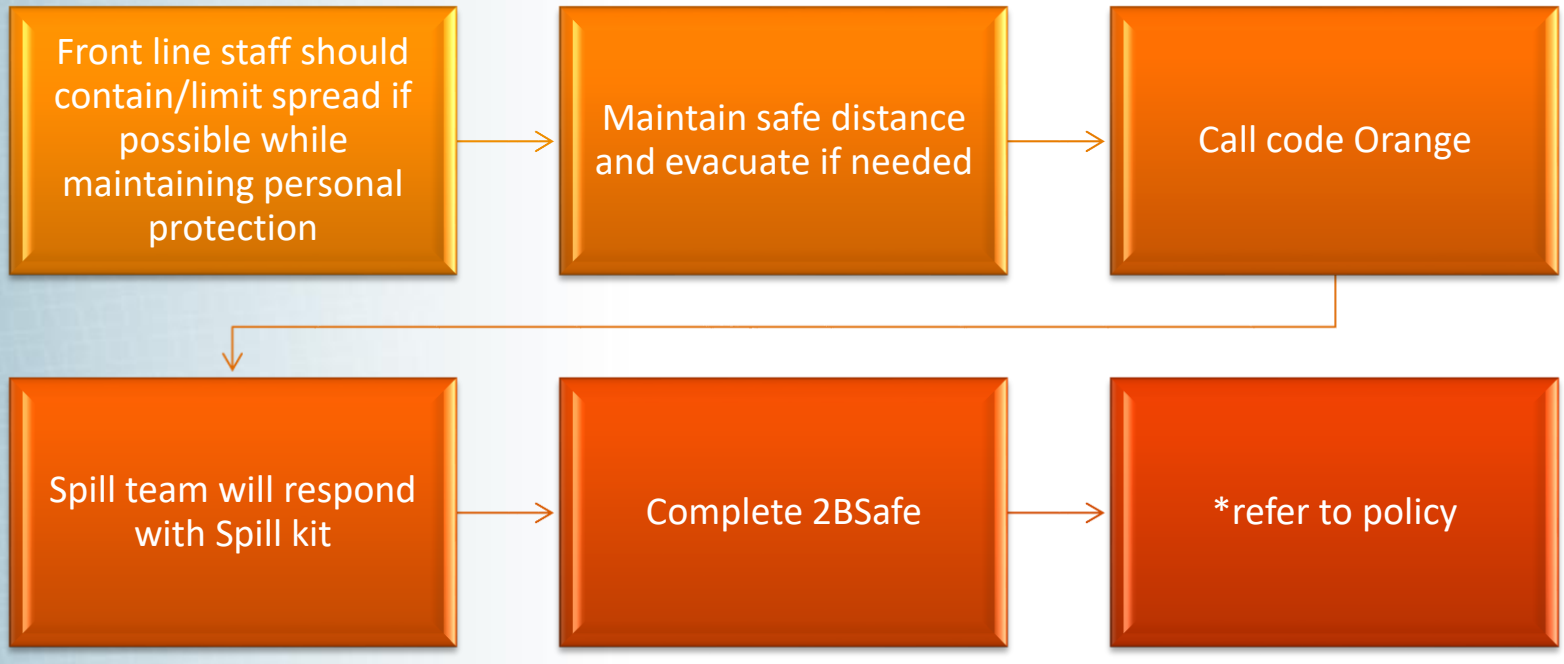
Disposal

- PPE without known contamination will be disposed in the regular trash.
- PPE that is exposed to known contamination or visibly soiled will be disposed in a yellow “trace waste” bag.

Management of Exposure (If it occurs)



Spill Management



* *Safe Handling of Hazardous Drugs – Medication List* (Section 16)

Module Completed

You have completed education on USP Chapter 800 guidelines--An important safety initiative to protect ourselves, our colleagues, our patients and our environment.