

PHARMACEUTICAL WASTE MANAGEMENT DUKE UNIVERSITY HEALTH SYSTEM



BLUE BIN PROGRAM

PURPOSE AND OBJECTIVE:

Upon completion staff will be able to:

- Identify the rationale for changes to the pharmacy hazardous waste management
- Identify classes of medications requiring pharmacy hazardous waste management practices
- Describe the process for appropriate disposal of designated medications that can contaminate the environment

THE PROBLEM WITH PHARMACEUTICAL WASTE

- Pharmaceuticals have been discovered in:
 - fish
 - surface water
 - drinking water
- JCAHO requires hospitals to have a pharmaceutical waste disposal program.
- The EPA Resource Conservation and Recovery Act regulates disposal of certain pharmaceuticals
- Some are regulated under EPA environmental rules
- The disposal of hazardous waste down the drain is the second most common violation cited by the US EPA when hospitals are audited



WHAT IS HAZARDOUS PHARMACEUTICAL WASTE?

THE EPA DETERMINES WHICH SUBSTANCES
ARE HAZARDOUS ONCE THEY BECOME A WASTE.
THESE SUBSTANCES MAY INCLUDE:

- All investigational drugs
- Designated chemotherapeutic agents with 3% or more of liquid remaining in the bag and all PO agents in the original packaging
- Any other pharmaceutical agent specifically identified as a pharmaceutical hazardous waste
- Nicotine , Warfarin and Arsenic Trioxide (including packaging)

Designated Medications:

- Creams
- Transdermal patches
- Inhalers
- Powders
- Pills and capsules
- IV solutions
- Syringes
- Vials
- IV Bags

EXAMPLES OF HAZARDOUS PHARMACEUTICAL WASTE:



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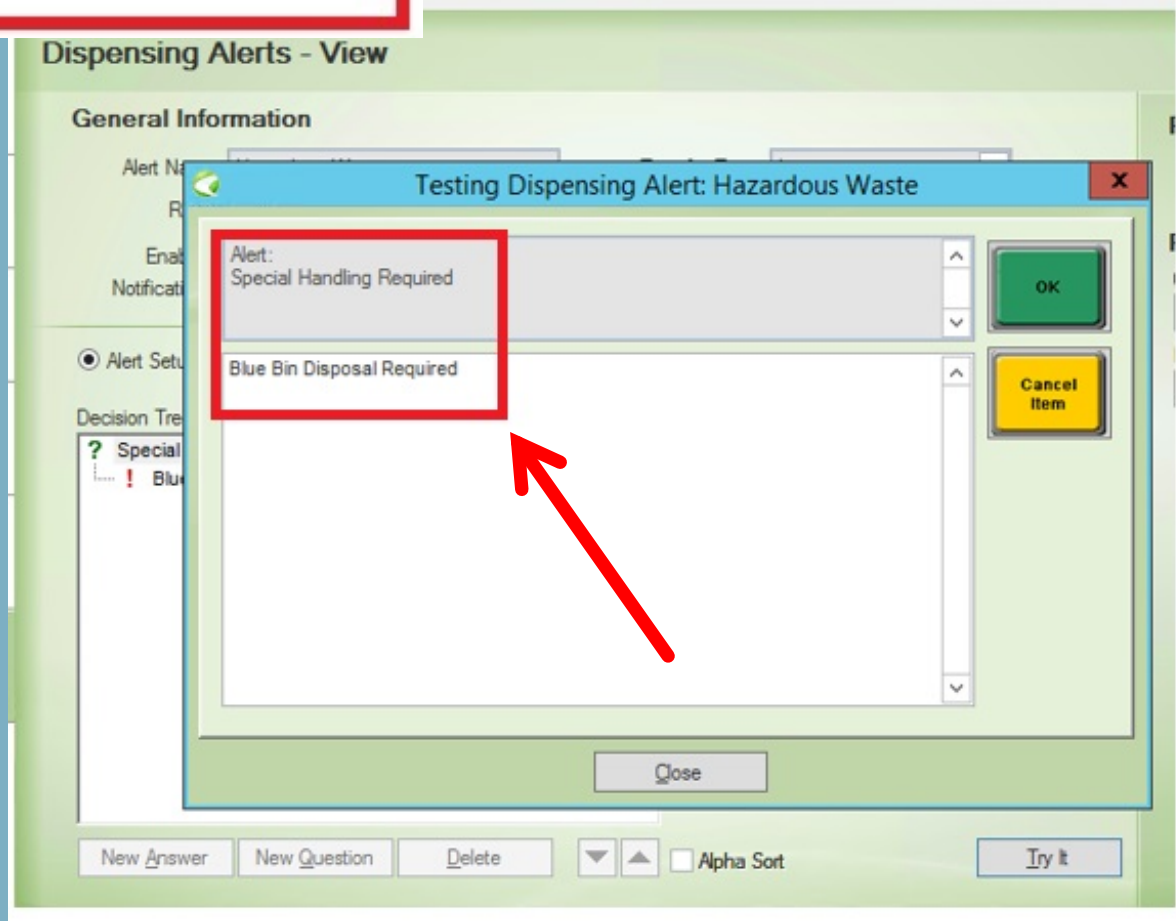
How do I know if a drug requires blue bin disposal?

insulin NPH (HumuLIN N, NovoLIN N) injection 10 Units

3 mL injection

Route: SubQ

****Caution: Hazardous Drug. Special handling and disposal in blue bin required.****



How do I know if a drug requires blue bin disposal?

Willow, Michael
Preferred Name: None
Age/Sex/DOB: 81 y o / Male / 5/23/1953
MRN: D1402222
CSN: 100040058
Primary Loc: 2313-91
Inpatient
Admit Dt: 03/27/2015
Current Loc: 2313-01
Allergies: Iodinated Contrast
Code: Not on file
Attend Prov: MUSSEY, R
Health Maintenance
Height: None
Weight: None
BSA: Patient
CR: None
Isolation: None
Infection: None
Sx: None
Falls Risk: None
Patient FYIs: None
Pref Language: None
Need Interp: None

MAR
Refresh Report MAR Note Rx Messages Legend Show All Actions Link Lines

ALL Due/Overdue Meds Scheduled PRN Continuous Override Pulls Chemo Tx Plan RSH Tx Plan Respiratory Immunizations

Go to New or (Select Date) **Override** Patient Not Scanned Show All Details Hide All Admining

Tuesday June 09, 2015

0300	0400	0500	0600	0700	0800	0900	1000
acetaminophen (TYLENOL) chewable tablet 320 mg : Dose 320 mg : Oral : Every 4 hours PRN : Fever, dc :							
albuterol (PROVENTIL) nebulizer solution 2.5 mg : Dose 2.5 mg : Nebulization : 4 times Daily							
CARBOplatin (PARAPlatin) 750 mg in dextrose 5% sodium chloride 1							

MAR
Refresh Report MAR Note Rx Messages Legend Show All Actions Link Lines

Documented By: CAMPLE, MICHAEL Schedule Date/Time: 6/9/2015 08:45

Infusion

CARBOplatin (PARAPlatin) 750 mg in dextrose 5% sodium chloride 0.45% 1,000 mL chemo infusion : Dose 750 mg : Intravenous : Once

Frequency	Once
Route	Intravenous
Order Dose	750 mg
Admin Amount	750 mg
Infused Over	60 Minutes
Admin Instructions: If extravasation is suspected, please click on the Extravasation Policy link to access the current policy and treatment guidelines. **Caution: Hazardous Drug. Special handling and disposal in blue bin required.**	

Order Start
Order End
Admining

Order Details
Frequency: Once
Route: Intravenous
Order Dose: 750 mg
Admin Amount: 750 mg
Infused Over: 60 Minutes

Order Instructions:
If extravasation is suspected, please click on the Extravasation Policy link to access the current policy and treatment guidelines.
Caution: Hazardous Drug. Special handling and disposal in blue bin required.

Action:
New Bag
Route: Intravenous
Dose: 750 mg
Order Concentration: 0.75 mg/mL

Date: 6/9/2015 Time: 08:01
Site:
Rate: ml/hr
Infused Over: 60 Minutes
Comment: Enter Comment

Order Start Time: Today 06/09/15 at 08:45
Order End Time: Today 06/09/15 at 20:44
Administration Remaining: 1
References: Lexi-Comp
Extravasation Policy
Line status of administration: Currently Unlinked
Next Actions: 06/09 08:45

Mixture Components

Component	Type	Amount
CARBOplatin 10 mg/mL Soln	Medications	750 mg
dextrose 5% sodium chloride 0.45% Soln	Base	925 mL



THE ONLY ITEMS THAT BELONG IN THE BLUE BIN:



The Duke Blue Bin Drug Disposal List NON-EMPTY CONTAINERS ONLY IN THE BLUE BINS

Updated 05/04/2018



Most Common Blue Bin Drugs:

All Chemotherapy	Aerosol Inhalers	Nicotine Patches & Gum including the packaging	Warfarin including the packaging
Anti-venom	Insulin (all forms)	Neomycin (all forms)	Vitamins (all forms)

Other Blue Bin Drugs:

Unused Silver Nitrate Applicators	Alcohol with concentrations > 24%	Alprostadil	Unused Instant Hot/Cold Compresses
Aluminum Chloride (Drysol®)	Ammonia Inhalants (aromatic)	Amyl Nitrite	Arsenic Trioxide
Benzalkonium Chloride	Benzocaine Spray (HurriCaine®)	Benzoin Tincture	Carbamide Peroxide Oral Solution (GlyOxide®)
Cromolyn Sodium	Darbepoetin (Aranesp®)	Dimethyl Sulfoxide (Rimso-50®)	Ethyl Chloride
Exenatide	Fluorouracil	Flurbiprofen Ophth	Lopinavir-Ritonavir
Mometasone Furoate	Podophyllum Resin (Podocon®)	Physostigmine Salicylate	Prednisolone-Sulfacetamide
Reserpine	Ritonavir	Silver Sulfadiazine Containing Cream and Shampoo	Sitzmark Capsules
Treprostinil Sodium	Triamcinolone Spray (Kenalog®)	Trichloroacetic Acid	Trifluridine Ophth

These are the *most commonly used* Blue Bin drugs.

If you have a question about a drug or the program call us at (919) 684-2794

HOW DO I DISPOSE OF HAZARDOUS PHARMACEUTICAL WASTE?

- Blue Bin waste containers are located in designated areas within the unit or clinic.
- Large Blue Bins (for IVs, large vials, overflow etc.) are located in the soiled laundry room of each unit. (on campus)
- These bins are managed by OESO or a contractor designated by OESO.



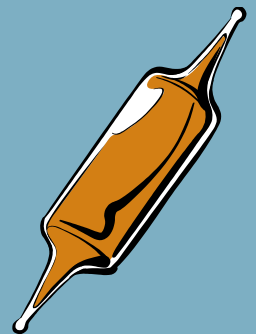
WHAT DO I DO WITH PILLS?

- Blue bin drug listed pills that are being disposed of (1/2 pills, dropped, etc...) should be returned to original package and disposed of in the Blue Bin.
- If patient had emesis after taking pills – you do NOT have to retrieve these pills to dispose of in Blue Bin.



WHAT ABOUT AMPOULES, VIALS AND SYRINGES?

- If an ampoule, vial or syringe is empty after patient administration; then dispose of in **Red Bin Waste**.
- If there is more than 3 % medication remaining in an ampoule, vial or syringe then dispose of in **Blue Bin Waste**.



WHEN POSSIBLE, ALL ITEMS SHOULD BE RETURNED TO THEIR ORIGINAL PACKAGING PRIOR TO PLACEMENT IN THE BLUE BIN WASTE CONTAINER

- Waste from the blue bin is sorted by the OESO team to determine the appropriate disposal route.
- If they are unable to identify what the medication is then it is classified as a highly toxic drug, which can lead to more expensive method for disposal.

WHAT HAPPENS WHEN THE BLUE BIN CONTAINERS ARE FULL?

- Bins are picked up on a rotating schedule. In general they are picked up once a week.
(Monday-Friday 8am – 5pm)
- Bins are managed by OESO.
- If smaller bin is $\frac{3}{4}$ full, use the large bin located in the soiled linen closet and call OESO at 684-2794 for pickup of smaller bin waste.

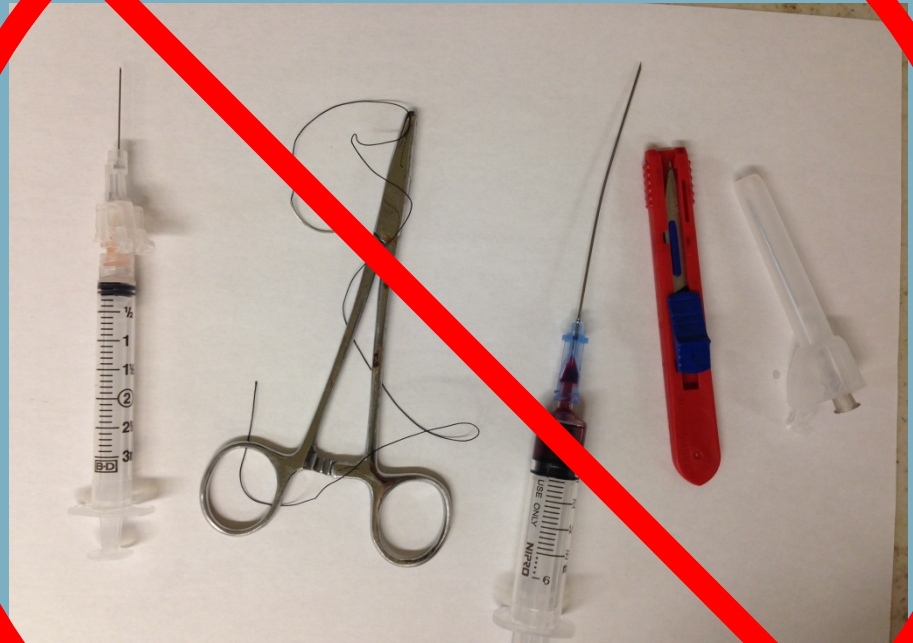
WHAT IF THERE IS A SPILL INVOLVING ONE OF THESE PREPARATIONS?

- Follow safe handling practices and treat the medication and/or associated tubing/syringe as hazardous waste. This means:
- Wearing correct Personal Protective Equipment (PPE) such as gloves, gowns and goggles
- Clean up the spill using adsorbent material
- Follow spill instructions for pick up and disposal of material



WHAT DOES NOT GO INTO THE BLUE BIN?

- Any unopened and unused pharmaceuticals. These will still be returned to the pharmacy.
- Empty medication vials, syringes or IV bags.
- Controlled Substances do NOT belong in the blue bin (ex. Narcotics & Paralytics)
You will continue to follow the same practices already established for the disposal of these drugs.



REMEMBERING THE BLUE BIN PROGRAM:

- Look at the medication labels, MAR, and Omnicell.
- Look at the chart located on top or around the blue bin before disposing of drug

Duke Blue Bin Drug Disposal List
NO EMPTY CONTAINERS IN THE BLUE BINS
Most Common Blue Bin Drugs:

Updated 04/21/2020

All Chemotherapy (Trace Chemo in Red Bin)	Neomycin (all forms)
Anti-venom	Alprostadiol
Unused Silver Nitrate Applicators	Amyl Nitrite
Aluminum Chloride (Drysol®)	Benzoin Tincture
Benzalkonium Chloride	Dimethyl Sulfoxide (Rimso-50®)
Cromolyn Sodium	Flurbiprofen Ophth
Exenatide	Physostigmine Salicylate
Mometasone Furoate	Silver Sulfadiazine Containing Cream and Shampoo
Reserpine	Trichloroacetic Acid
Treprostinil Sodium	Warfarin (including packaging)
Aerosol Inhalers	Vitamins (all forms)
Insulin (all forms)	Unused Instant Hot/Cold Compresses
Alcohol with concentrations > 24%	Arsenic Trioxide
Ammonia Inhalants (aromatic)	Carbamide Peroxide Oral Solution (GlyOxide®)
Benzocaine Spray (HurriCaine®)	Ethyl Chloride
Darbepoetin (Aranesp®)	Lopinavir-Ritonavir
Fluorouracil	Prednisolone-Sulfacetamide
Podophyllum Resin (Podocon®)	Sitzmark Capsules
Ritonavir	Trifluridine Ophth
Triamcinolone Spray (Kenalog®)	Lugols






If you have a question about a drug or the program
call OESO at (919) 684-2794.





IF YOU HAVE
ANY QUESTIONS:

CALL OESO
(OCCUPATIONAL HEALTH AND SAFETY OFFICE)

MONDAY-FRIDAY 8AM-5PM

684-2794

[HTTP://WWW.SAFETY.DUKE.EDU/ENVPROGRAMS/PHARMWASTE.HTM](http://www.safety.duke.edu/envprograms/pharmwaste.htm)

IF YOU HAVE AN OVER FLOWING BIN
CALL FOR PICKUP:
684-2794

IN MOST CASES WASTE WILL BE PICKED UP
WITHIN 24HRS ON WEEKDAYS (MONDAY – FRIDAY)

IF BIN IS OVERFLOWING:
USE LARGE BIN LOCATED IN THE SOILED
LINEN CLOSET UNTIL PICK UP

TEST QUESTIONS:

Why do we have to have "Blue Bin Waste"?
(choose the best answer)

A. To better protect our environment.

B. To ensure all chemotherapy waste (including empty bags, syringes, etc...) is disposed of in the appropriate container.

C. To keep pharmaceutical waste from returning to the pharmacy for disposal.

D. To keep biological waste separate from pharmaceutical waste.

TEST QUESTIONS:

How will I know if what I am giving is considered blue bin waste?

- A. It will be identified on the medication administration record (MAR)
- B. It will be identified on the OmniCell screen
- C. It will be identified on the pharmacy label
- D. It will be identified on the blue bin chart located on or near the blue bin.
- E. All of the above

TEST QUESTIONS:

If I have to give $\frac{1}{2}$ of a tablet that is considered blue bin waste, how do I dispose of the other $\frac{1}{2}$ of the tablet?

- A. Place it in the sharps box.
- B. Flush it down the toilet.
- C. Return it to the original packaging and zip lock bag.
Place in blue bin waste.
- D. Place in zip lock bag and place in blue bin waste.

TEST QUESTIONS:

You give your patient medication that was sent to you in a syringe. The pharmacy label indicates that it is considered blue bin waste. The syringe is now empty after patient administration. How do you dispose of this syringe?

- A. In the blue bin
- B. In the red bin**
- C. In the trash at the bedside
- D. In the nursing station trash