PHARMACEUTICAL WASTE MANAGEMENT
Duke University Health System

BLUE BIN PROGRAM

BLUE BIN DRUGS ONLY

NO EMPTY Packages, Syringes, Needles, IVs
NO Gloves
NO Scissors, Scalpels, Forceps
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.


- 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 > 10 ml 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:
How do I know if a drug requires blue bin disposal?

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

Dispensing Alerts - View

Alert: Special Handling Required

Blue Bin Disposal Required
How do I know if a drug requires **blue bin disposal**?
# The Only Items That Belong in the Blue Bin:

<table>
<thead>
<tr>
<th>Chemotherapy</th>
<th>Insulin</th>
<th>Metal Containing</th>
<th>Miscellaneous</th>
<th>Nicotine</th>
<th>Ophthalmic</th>
<th>Topical</th>
<th>Vaccines</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Chemotherapy</td>
<td>All forms</td>
<td>All Vitamins</td>
<td>Alprostadil</td>
<td>Nicotine gum-including packaging</td>
<td>Flurbiprofen Ophth</td>
<td>Mometasone Furoate</td>
<td>All Anti-venom</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Amyl Nitrite patches-including packaging</td>
<td>Neomycin-Polymyxin-Dexameth</td>
<td>Neomycin-all forms</td>
<td>Diphtheria-Tetanus</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Cromolyn Sodium</td>
<td>Neomycin-Polymyxin-Gramicid</td>
<td>Selenium Sulfide</td>
<td>Influenza</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Cyanide Antidote</td>
<td>Physostigmine Salicylate</td>
<td>Silver Nitrate</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Exenatide</td>
<td>Prednisolone-Sulfacetamide</td>
<td>Silver Sulfadiazine</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lopinavir-Ritonavir</td>
<td>Trifluridine Ophth</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Reserpine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ritonavir</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Treprostinil Sodium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Unused Hot/Cold packs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Warfarin-Including packaging</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
HOW DO I DISPOSE OF HAZARDOUS PHARMACEUTICAL WASTE?

- Blue Bin waste containers are located in designated areas within the unit.

- Large Blue Bins (for IVs, large vials, overflow etc.) are located in the soiled laundry room of each unit.

- These bins are secured in place and emptied on a routine basis 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 10% 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.

<table>
<thead>
<tr>
<th>Chemotherapy</th>
<th>Insulin</th>
<th>Metal Containing</th>
<th>Miscellaneous</th>
<th>Nicotine</th>
<th>Ophthalmic</th>
<th>Topical</th>
<th>Vaccines</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Chemotherapy</td>
<td>All forms</td>
<td>All Vitamins</td>
<td>Alprostadil</td>
<td>Nicotine gum-including packaging</td>
<td>Flurbiprofen Ophth</td>
<td>Benzocaine</td>
<td>Diphteria-Tetanus</td>
</tr>
<tr>
<td>Deferoxamine Mesylate</td>
<td>Ambrosantan</td>
<td>Nicotine patches-including packaging</td>
<td>Neomycin-Polymyxin-Dexamethesin</td>
<td>Mometasone Furoate</td>
<td>Influenza</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amyl Nitrite</td>
<td>Neomycin-Polymyxin-Gramicid</td>
<td>Neomycin-all forms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cromolyn Sodium</td>
<td>Physostigmine Salicylate</td>
<td>Selenium Sulfide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyanide Antidote</td>
<td>Prednisolone-Sulfacetamide</td>
<td>Silver Nitrate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exenatide</td>
<td>Trifluoridine Ophth</td>
<td>Silver Sulfadiazine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lopinavir-Ritonavir</td>
<td>Trypan Blue Ophth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nedocromil Sodium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pramoxine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reserpine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ritonavir</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teriparatide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treprostinil Sodium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unused</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hot/Cold packs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Warfarin-including packaging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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

IF YOU HAVE AN OVERFLOWING 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
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
If I have to give ½ of a tablet that is considered blue bin waste, how do I dispose of the other ½ 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