

Minimizing Regulated Medical Waste

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1. While we're talking about RMW minimization, NEVER compromise safety and compliance.
2. Focus on what you can control.
3. Measure - let the numbers talk for you!

Regulated Medical Waste (RMW)

- H2E 10 Steps to Reducing Regulated Medical Waste
- Tools to help establish benchmarks, measure, and monitor your program
- P2 Strategies for Safely Reducing Red Bag Waste

BIOHAZARDOUS
WASTE IS 13 TIMES
MORE COSTLY TO
DISPOSE OF THAN
REGULAR TRASH



H2E 10 Steps to Reducing RMW

1. Understand State-specific RMW definitions



So what goes in the Red Bag?



So what should go in the Red Bag?

- Most infectious waste streams DO NOT go in red bag
- Items that do are generally derived from this category:

Blood and body fluid contaminated items that are “saturated or dripping” and “those caked with dried blood or dried body fluids.”

... and what should not!

Unless visibly soiled with blood, these items do not belong in red bag trash:

- ✓ *Bed Pans*
- ✓ *Empty specimen containers*
- ✓ *Dressings and gauze*
- ✓ *Diapers/Incontinence Pads*
- ✓ *Splints*
- ✓ *Masks, gowns, gloves*
- ✓ *Tapes*
- ✓ *Cotton*
- ✓ *Suction tubing*
- ✓ *Vent tubing*
- ✓ *Emesis basins*
- ✓ *Urinals*
- ✓ *Paper towels*
- ✓ *IV bags*
- ✓ *Casts and splints*
- ✓ *Packaging materials*
- ✓ *Foley bags and catheters*
- ✓ *Alcohol preps*

H2E 10 Steps to Reducing RMW

1. Understand State-specific RMW definitions
2. Identify true waste costs and potential costs savings
3. Create a team to develop goals and an action plan



Data is a Powerful Tool

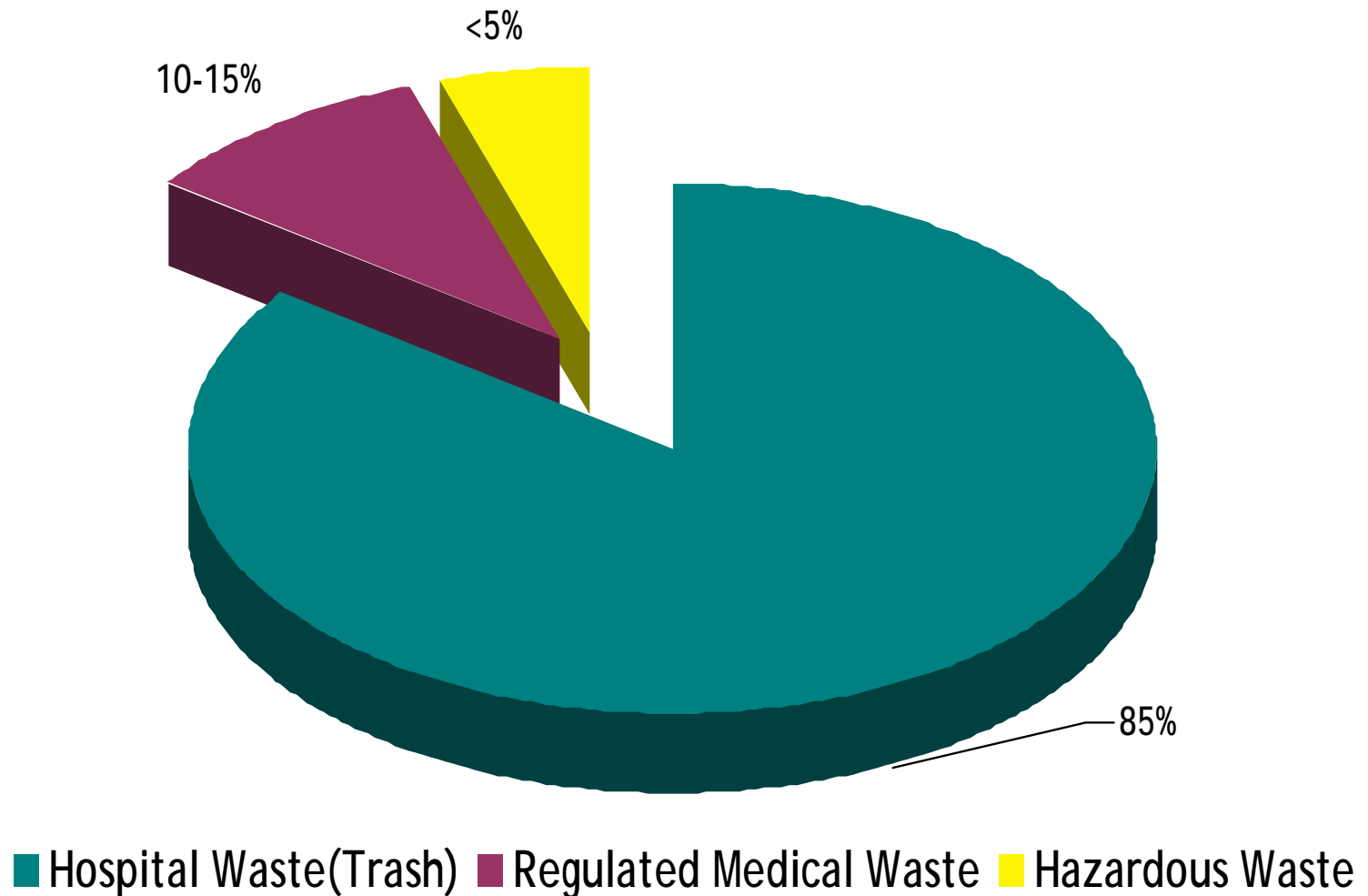
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1		Solid Waste*			Recycling				RMW			Hazardous Waste			Total		
2		lbs	tons	Cost	lbs	tons	Costs	Total Benefit	lbs	tons	Cost	lbs	tons	Cost	lbs	tons	Costs
3	Jan	0	0.00	\$0	0	0.00	\$0	\$0	0	0.00	\$0	0	0.00	\$0	0	0.00	\$0
4	Feb	0	0.00	\$0	0	0.00	\$0	\$0	0	0.00	\$0	0	0.00	\$0	0	0.00	\$0
5	March	0	0.00	\$0	0	0.00	\$0	\$0	0	0.00	\$0	0	0.00	\$0	0	0.00	\$0
6	April	0	0.00	\$0	0	0.00	\$0	\$0	0	0.00	\$0	0	0.00	\$0	0	0.00	\$0
7	May	0	0.00	\$0	0	0.00	\$0	\$0	0	0.00	\$0	0	0.00	\$0	0	0.00	\$0
8	June	0	0.00	\$0	0	0.00	\$0	\$0	0	0.00	\$0	0	0.00	\$0	0	0.00	\$0
9	July	0	0.00	\$0	0	0.00	\$0	\$0	0	0.00	\$0	0	0.00	\$0	0	0.00	\$0
10	Aug	0	0.00	\$0	0	0.00	\$0	\$0	0	0.00	\$0	0	0.00	\$0	0	0.00	\$0
11	Sept	0	0.00	\$0	0	0.00	\$0	\$0	0	0.00	\$0	0	0.00	\$0	0	0.00	\$0
12	Oct	0	0.00	\$0	0	0.00	\$0	\$0	0	0.00	\$0	0	0.00	\$0	0	0.00	\$0
13	Nov	0	0.00	\$0	0	0.00	\$0	\$0	0	0.00	\$0	0	0.00	\$0	0	0.00	\$0
14	Dec	0	0.00	\$0	0	0.00	\$0	\$0	0	0.00	\$0	0	0.00	\$0	0	0.00	\$0
15	TOTAL	0	0.00	\$0	0	0.00	\$0	\$0	0	0.00	\$0	0	0.00	\$0	0	0.00	\$0
16		*Including C&D Landfilled															
17		0															
18		SUMMARY															
19		YTD lbs.	YTD Ton	%	Costs*	\$/lb	\$/Ton										
20	Solid Waste	0	0.00	#DIV/0!	\$0	#DIV/0!	#DIV/0!										
21	Recycling	0	0.00	#DIV/0!	\$0	#DIV/0!	#DIV/0!										
22	RMW	0	0.00	#DIV/0!	\$0	#DIV/0!	#DIV/0!										
23	RW	0	0.00	#DIV/0!	\$0	#DIV/0!	#DIV/0!										
24	Total	0	0.00	#DIV/0!	\$0	#DIV/0!	#DIV/0!										
25																	
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Summ |
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 Chart1 |
 Chart2 |
 Chart3 |
 ...

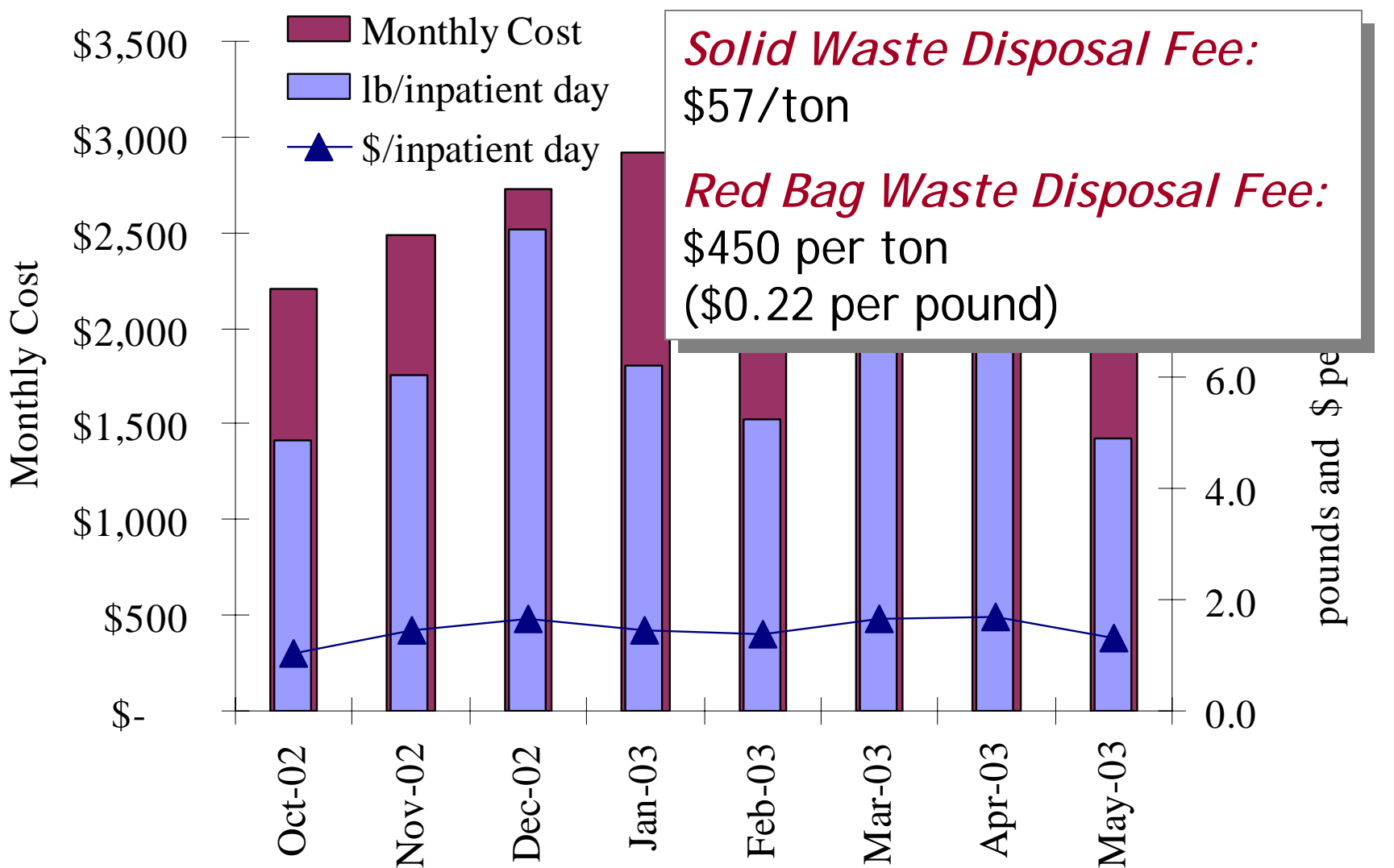
H2E has created a sample spreadsheet to capture waste data:

<http://www.h2e-online.org/pubs/WasteMgtTemplate.xls>

RMW - One Part of a Comprehensive Waste Program



Phoenix Indian Medical Center Red Bag Waste Data



Create a Team - Keep Others Involved!

Create a diverse team comprised of staff from:

- Housekeeping
- Infection Control
- Nursing
- Safety
- Facilities
- Education
- Purchasing
- Laboratories
- Clinicians (especially those from the OR, ED, and other critical care areas)



H2E 10 Steps to Reducing RMW

1. Understand State-specific RMW definitions
2. Identify true waste costs and potential costs savings
3. Create a team to develop goals and an action plan
4. Planning for waste segregation



Plan for Waste Segregation

- Determine container needs – what's being generated and how much?



- 40% of OR RMW waste is from suction canisters!
- Keep packaging out of red bags!



<http://mntap.umn.edu/health/91-Canister.htm>

Source Reduction Opportunity: BioElite Red Bags

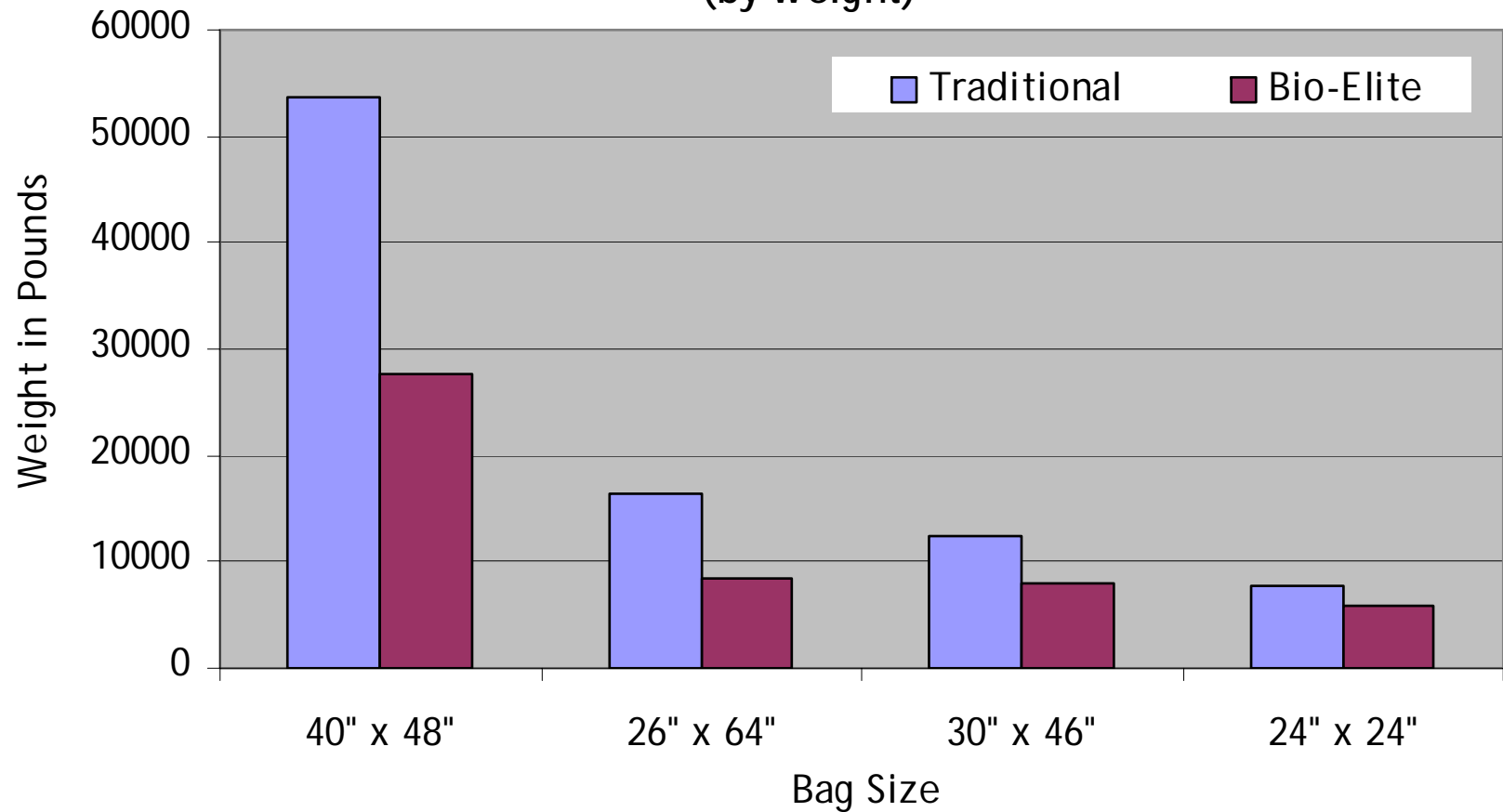
Bio-Elite red bags:

- Are stronger...
 - *Surpasses the ASTM 165 gram dropped dart test at 180 grams*
 - *Uses a star seal for leak protection*
- Weigh 32% less than conventional LDPE bags
- Made with 30% recycled plastic
- Cost less



BioElite Red Bags

UC Davis Medical Center 2002 Red Bag Use
(by weight)



BioElite Red Bags

Before



After



H2E 10 Steps to Reducing RMW

5. Container placement and signage

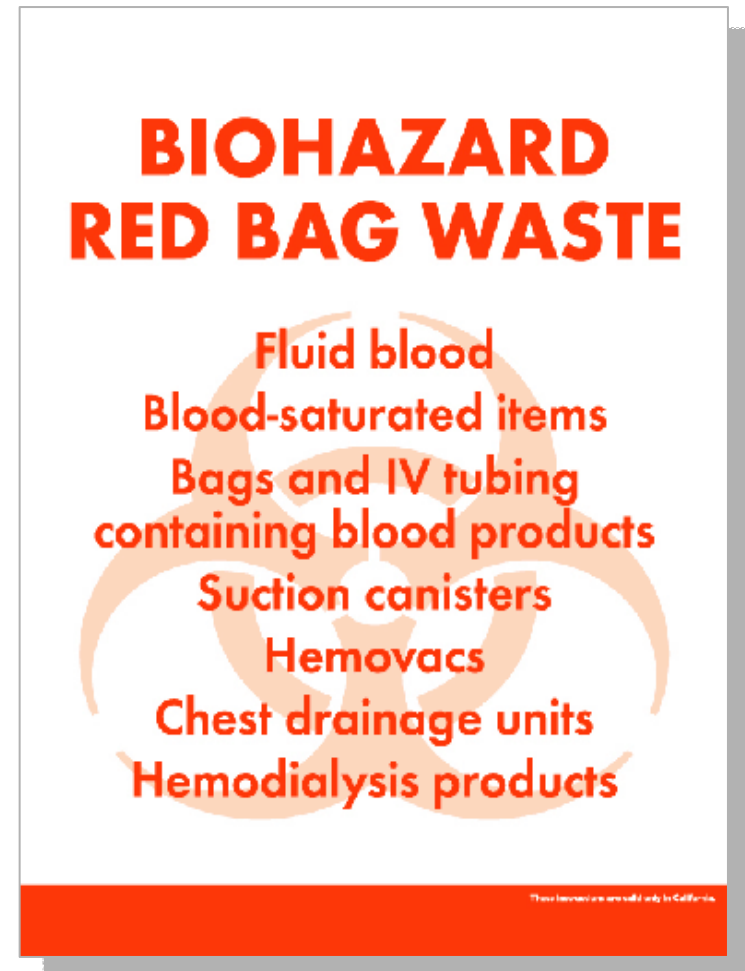


Location, Location, Location!



Post Signs

(since you can't be everywhere at once)



Post Signs

(since you can't be everywhere at once)

HOSPITAL STAFF USE ONLY



RED BAG WASTE COSTS 13 TIMES MORE THAN
REGULAR WASTE

PUT ONLY TRUE REGULATED MEDICAL WASTE IN
RED BINS

YES – RED BIN ME (autoclave)!

- Blood, blood products, anything soaked or dripping in blood
- Suction canisters with solidified fluid
- Chest drainage sets containing any fluid

YES – YELLOW BIN ME (incineration)!

- Tissues from surgery and autopsies
- Pathology
- Chemotherapy waste (trace)

NO! PUT ME IN REGULAR TRASH!

- IV bags, tubing, foley bags
- Gloves
- Urine soaked waste – including diapers, feces, vomit
- Blood tainted waste (note the distinction between blood soaked and blood tainted waste. A little bit of blood on an item can go into the regular trash).

UNDERSTAND YOUR IMPACT.

Do YOU Know Where To Put Your Waste???



Do NOT put me in a Red Bag!
Put me in a CLEAR bag



YES, put me in a Red Bag.



Do NOT put me in a Red Bag!

IV bags	cultures and streaks of infectious agents	batteries
IV tubing	blood, products of blood, anything caked, soaked, or dripping in blood	fluorescent bulbs
non-bloody wastes such as gloves, oxygen tubing, diapers	blood bags and IV tubing with blood backed up the tubing	mercury thermometers
urine-soaked waste, feces or vomit	tissues from autopsy or surgery	thermostats
Foley bags	waste from patients isolated with highly communicable disease	white, colored and computer paper
packaging and paper gowns	suction canisters	aluminum cans
blood-TAINTED waste**	hemostats	glass bottles
**Please note the distinction between blood-soaked and blood-tainted waste. A bit of blood on a gauze or speculum is not red bag waste.		cardboard




District of Columbia
Hospital Association



H2E 10 Steps to Reducing RMW

5. Container placement and signage
6. Worker Training and Education Plans and Policies



Training - What Can You Do?

- Waste assessments
- Outreach materials
- Formal training programs
 - ✓ New employees - integrate into job description
 - ✓ Communicate goals and program progress
 - ✓ Can departments be accountable for RMW costs?

REMEMBER:
Compliance and
safety first
Focus on what
you can control

Employees aren't the only ones...



SAMPLE QUIZ: Where to throw?



- IV bags are not considered red bag wastes
- Items containing non-infectious body fluids generally not considered red bag waste



- Used food service items ARE NOT red bag wastes



- “Soiled” vs “tainted”



SAMPLE QUIZ: Where to throw?



- Syringes, needles, blades, scalpels, lancets, broken glass, and any other contaminated sharp object should be placed in sharps containers

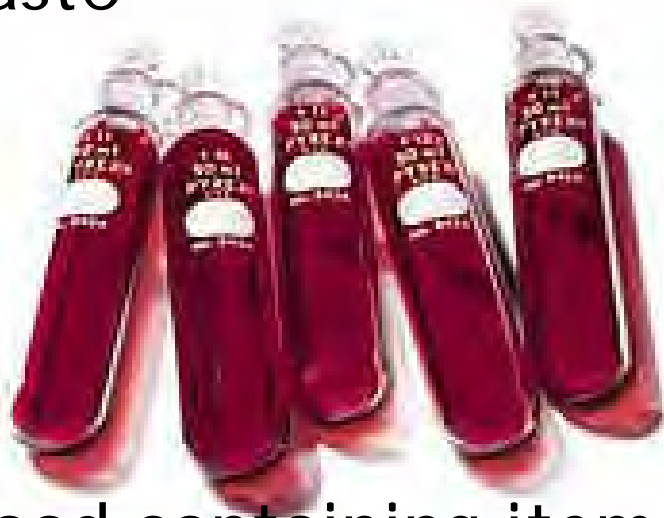


- Used gloves, masks, and gowns that are not blood soaked are not red bag waste



SAMPLE QUIZ: Where to throw?

- Used paper towels and tissue are not red bag waste



- Blood containing items capable of being poured or spilled and other items visibly soiled with blood are considered red bag wastes



H2E 10 Steps to Reducing RMW

5. Container placement and signage

6. Worker Training and Education Plans and Policies

7. Sharps Management

8. Problem Identification and Resolution Plan



H2E 10 Steps to Reducing RMW

9. Waste treatment and waste handling

10. Track progress, report successes, and reward staff!



RMW Reduction Case Study: University Medical Center, Tucson

- Stericycle provides RMW disposal:
 - sharps & red bag waste are autoclaved
 - chemo & pathology waste are incinerated
- May 2004: Initiated Red Bag waste reduction training program:
 - ✓ Reduced number of red bins in some areas
 - ✓ Stericycle conducted a medical waste audit
 - ✓ Posted signs describing proper disposal of red bin waste, yellow bin waste and regular waste
 - ✓ Saf-T-Grams sent to staff educating on new program and procedures.



Reusable Sharps Container Program

July 2004: UMC Implemented Biosystems® Reusable Sharps Container Program

- Containers processed at a permitted off-site treatment facility
- Containers opened by a robotic mechanism and emptied for processing
- Containers washed and sanitized and returned to hospital for reuse



Biosystems® is a Service Contract...

- Installed 1,000+ reusable sharp container “lock boxes” throughout the hospital and in satellite clinics
- Conducted comprehensive facility audit to determine proper container size and service frequency
 - ✓ Biosystems® service staff on campus 3 days per week



$$\begin{aligned} \frac{\$8,600 \text{ per month}}{1000 \text{ containers}} &= \$8.60 \text{ container/month} \\ &\sim \text{or} \sim \\ &= \sim \$0.30 \text{ container/day} \end{aligned}$$

Service Contract Displaces Other Costs

- No longer purchase disposable sharps containers
 - ✓ 1-quart containers = 225/year
 - ✓ 2-gallon containers = 694/year
 - ✓ 3-gallon containers = 11,901/year
 - ✓ 7-gallon containers = 1,655/year

Purchase nearly
14,500 per year,
costing \$89,250!



Service Contract Displaces Other Costs

- Cost of disposing of sharps containers ~\$30k/year
- Associated labor costs from managing sharps program in-house
 - ✓ Purchasing, warehouse, environmental services, nursing, hazardous waste staff
 - ✓ Handling, receiving, inventory, collection, transport, packing, monitoring, distribution



**~\$15,000
LABOR COST**

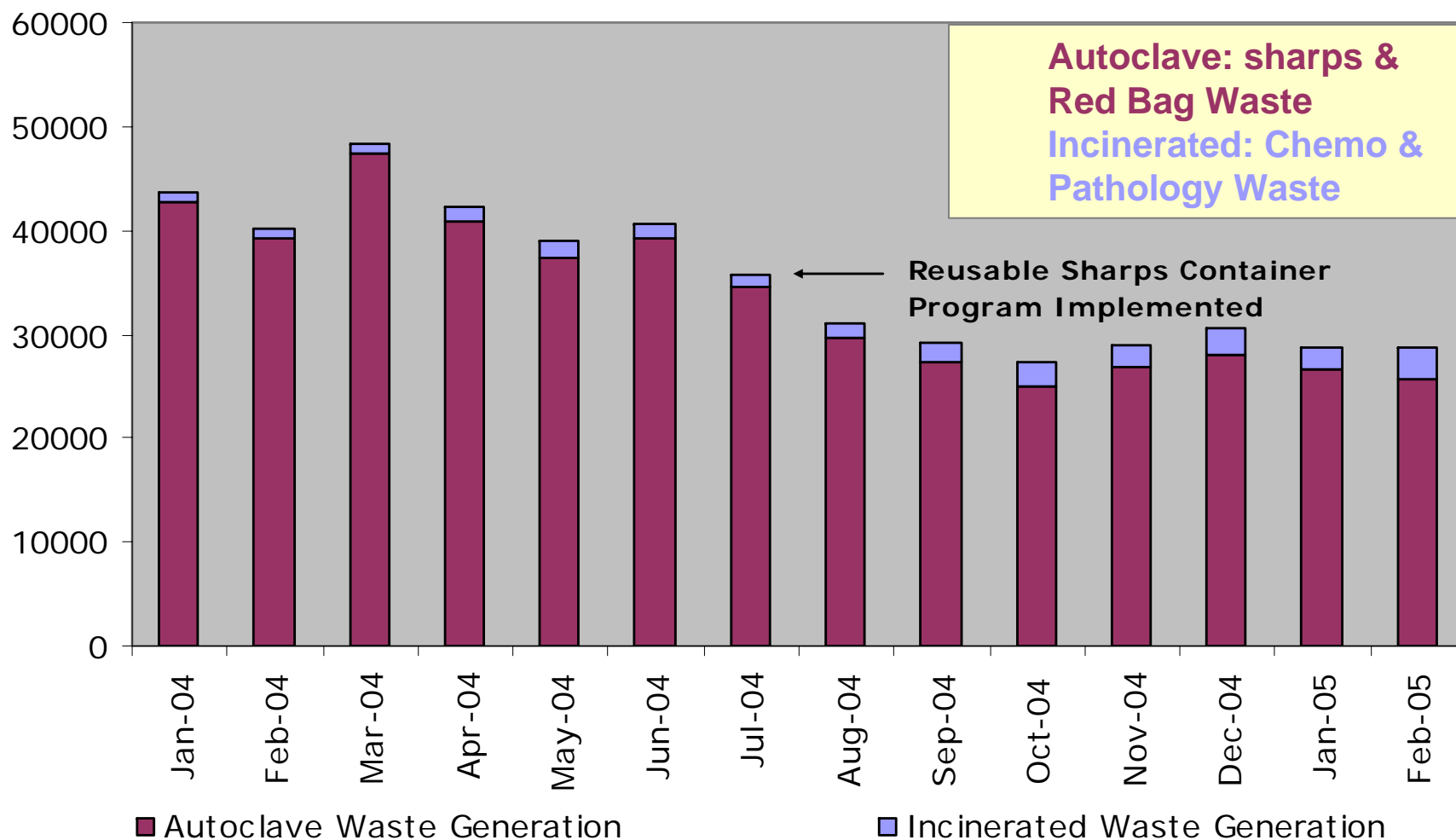
... and displaces OSHA risk

- Biosystems® fully manages sharps wastes, including handling and moving containers; therefore minimizing OSHA needle stick risk
 - ✓ University Medical Center estimated 8 incidents per year, \$1,200 each

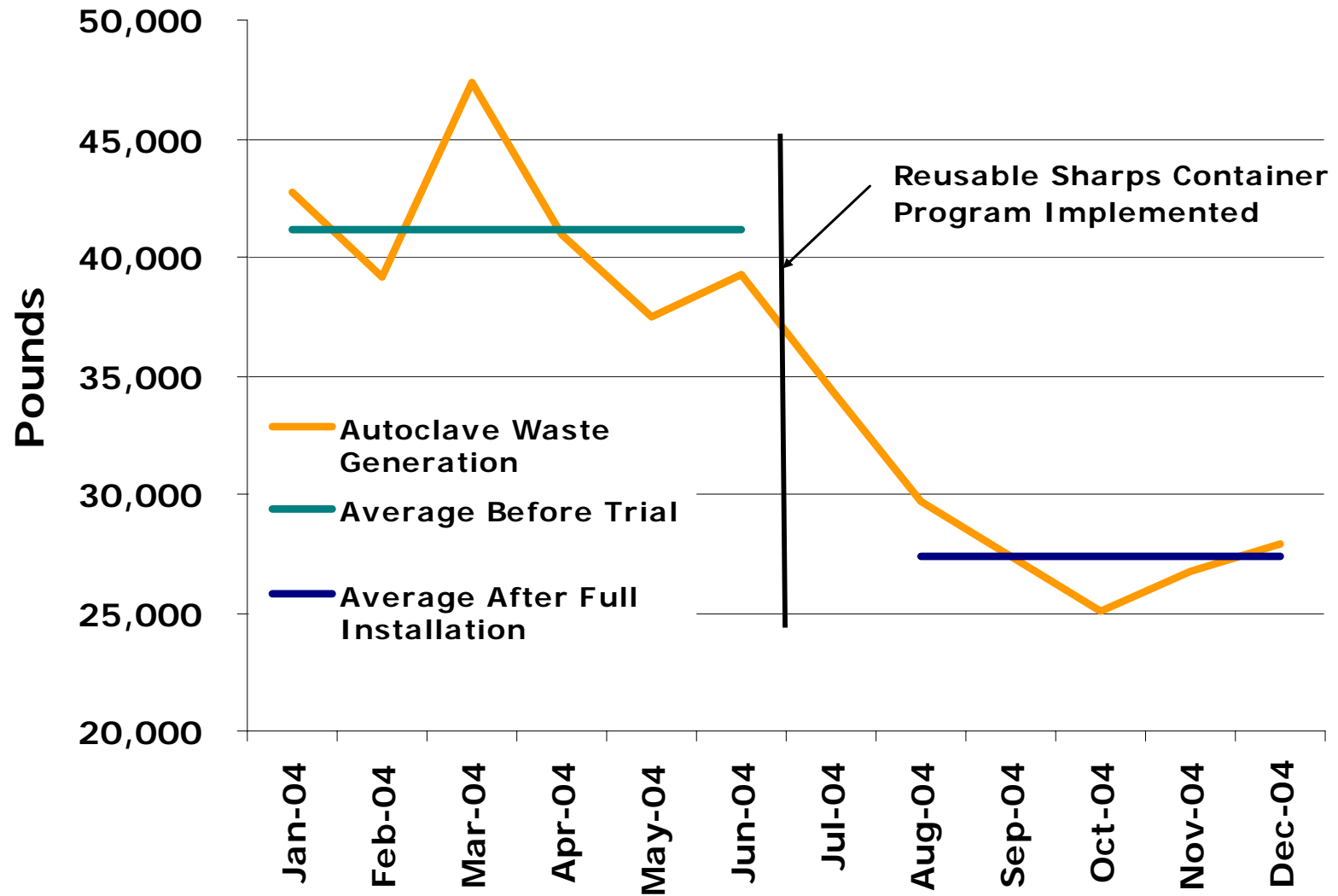
**ESTIMATED
~\$12,000
AVOIDED
OSHA COSTS**



RMW Disposal: The Big Picture



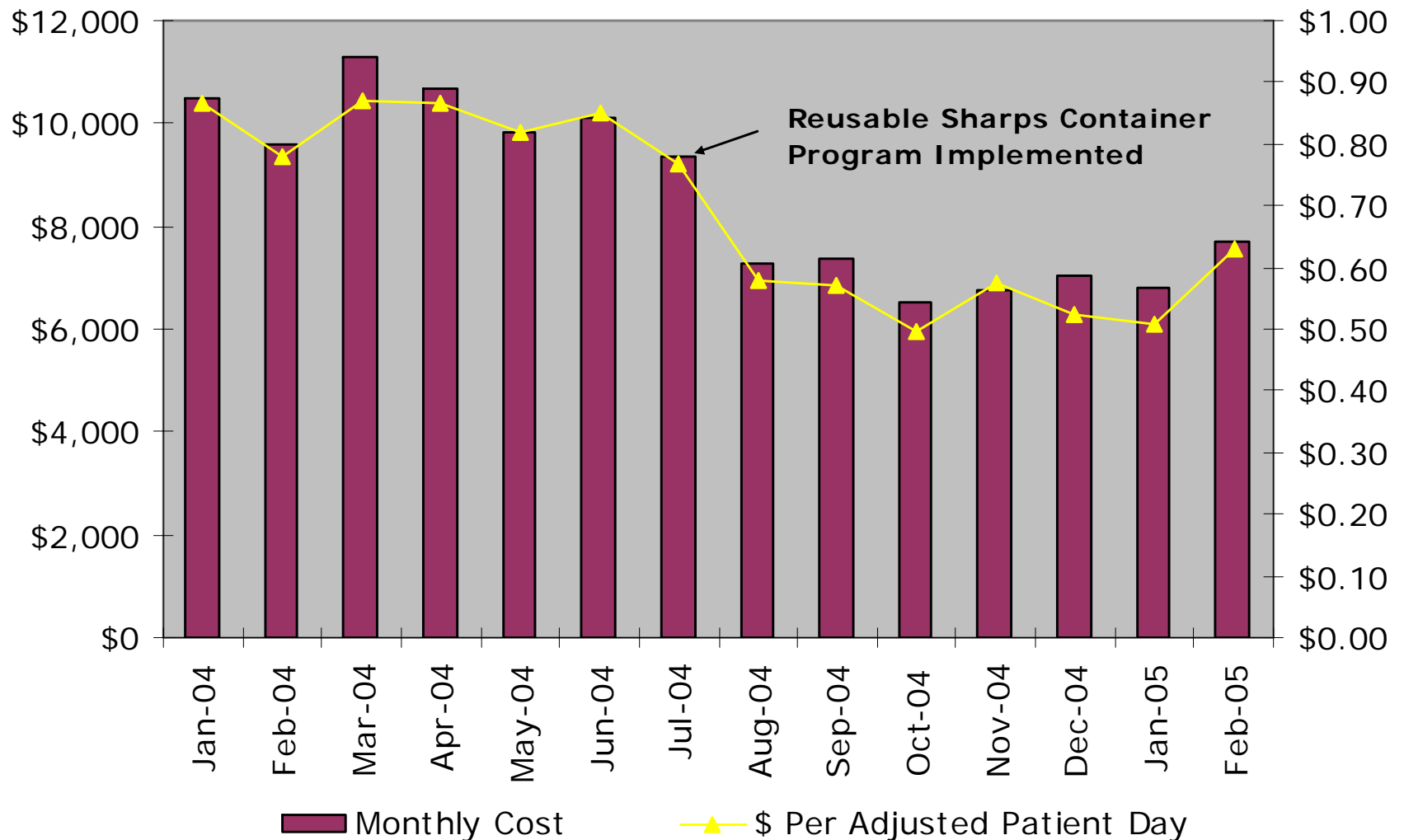
Reusable Sharps Containers: Achieve ~35% Reduction by Weight



2005 Case Study: University Medical Center, Tucson, AZ



Reusable Sharps Containers: Significantly Affects the Bottom Line



2005 Case Study: University Medical Center, Tucson, AZ



RMW Reduction Case Study: University Medical Center, Tucson

- Autoclave waste was reduced from 41,154 lbs/month to 27,353 lbs/month
- 3.4 lbs/patient day to 2.3 lbs/patient day
- \$0.83 per patient day to \$0.55 per patient day

**CASE STUDY RESULTS:
13,000 POUNDS (~6.5 TONS)
DIVERTED AND SAVINGS OF OVER
\$3,000 PER MONTH!**

Annual Costs: Sharps Mgmt. Comparison

DISPOSABLE	REUSABLE
<ul style="list-style-type: none">+ Purchase: \$89k for sharps containers+ Disposal: ~\$36k additional disposal costs (sharps containers as RMW)+ Labor: \$15k for managing sharps program+ OSHA: \$12k in needle stick related OSHA costs	<ul style="list-style-type: none">+ Service: \$103k (\$8.6k/mo) for Biosystems® service- Disposal savings: \$36k disposal costs (\$3k per month)- Labor savings: \$15k reduced labor costs- OSHA savings \$12k from reduced risk.
\$152k PROGRAM COST	\$40k PROGRAM COST

Reusable Sharps Containers: Implementation Considerations

- **Buy-in:** Significant process change – must get buy-in from nurses, environmental services, purchasing, health and safety, etc.
- **Contracting:** Added service contract – additional costs to one department, but greatly reduces cost in others
- **Containers:**
 - “New Container” transition period
(slightly different shape, size, function)
 - Variety of mobile or fixed sharps lock boxes.

Take Home Message

1. While we're talking about RMW minimization, NEVER compromise safety and compliance.
2. Focus on what you can control.
3. Measure - let the numbers talk for you!