

Sharps and Bio-Medical Waste Disposal: Improving Environmental Impact and Cost

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Element 1: Purpose

- Sharps container usage and bio-medical waste disposal are areas without any direct patient benefit but which carries both short and long-term ecological costs.
- The use of sharps containers and bio-medical waste was examined in an attempt to decrease cost and environmental impact.



Element 2: Benchmarks & Goals

- Although Occupational Safety and Health Administration guidelines clearly describe what is to be disposed of in sharps containers and bio-medical waste bags, staff are often unsure of these regulations. As a result, sharps containers and bio-medical waste could be used inappropriately as generic garbage receptacles.
- A goal was set for a reduction in sharps and bio-medical waste of at least 25% within 6 months after implementation of education and training.



Element 3: Data Collection Plan

- To determine whether sharps containers and bio-medical waste red bags are used appropriately, the quality committee studied what was actually placed into sharps containers and bio-medical waste bags in an operating and recovery room setting.
- Material placed into sharp containers and bio-medical waste bags were examined to identify potential inappropriate disposal.



Element 4: Evidence of Data Collection

- One sharps container from an operating room was emptied and non-sharps items were separated from the sharps.
- One bio-medical waste bag from the recovery room was emptied and non-bio-medical waste was separated from the bio-medical waste.

Element 5: Data Analysis

- After the sharps container was examined, the highest percentage of non-sharps was found to be empty glass vials. Also noted was the inappropriate disposal of pharmaceutical waste.
- After the bio-medical waste bag was examined, the high content of gloves, paper products, I.V. bags and tubing with no visible bio-medical waste on them was noted and subsequently evaluated.



SHARPS CONTAINER BIO-MEDICAL WASTE BAG

Element 6: Comparison of Current Performance to Performance Goal

- Baseline performance: From 10/2017-10/2018, 319 boxes of sharps and bio-medical waste were disposed of by Stericycle, our waste disposal company.
- Performance goal: Reduction of sharps and bio-medical waste of at least 25%.

Element 7: Corrective Action

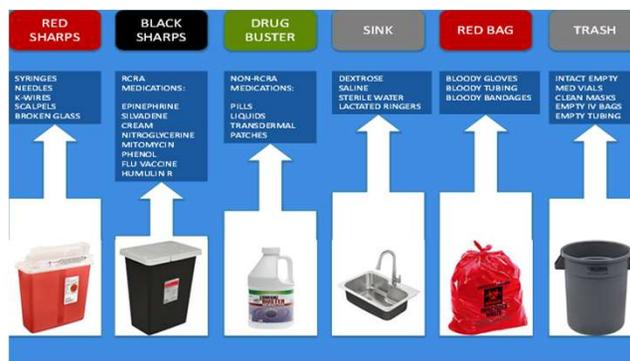
- An in-service for the staff demonstrating proper disposal of medications, sharps and bio-medical waste was performed in December of 2018. Education included proper disposal of medications, sharps and bio-medical waste.
- Most empty medication bottles, vials, packaging and empty IV's can be disposed of in the municipal trash with the exception of hazardous Resource Conservation and Recovery Act (RCRA) waste pharmaceuticals.

Examples of RCRA medications are as follows:

- Epinephrine (Adrenalin)
- Nitroglycerine
- Mitomycin
- Phenol
- Influenza Vaccine
- Humulin R Insulin
- Silvadene Cream

*Please note: Marcaine and Lidocaine with Epinephrine are NOT considered RCRA medications because they are not the sole active ingredient in the product.

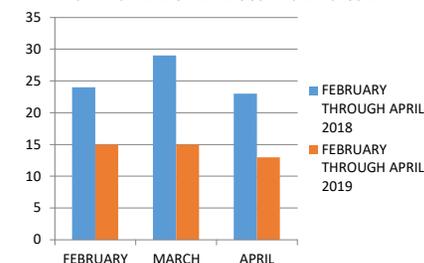
- RCRA medications (absorbed into a sponge or 4x4) and all vials, IVs and other containers that have held a RCRA medication must be managed as hazardous waste and be discarded into a black sharps container.
- Non-hazardous medications are to be disposed of in a medication waste disposal system to de-activate and contain the medications. Examples of medication disposal systems are Drug Buster and Rx Destroyer.
- What can go down the sink? IV bags of dextrose, saline and lactated ringers, as well as bottles of saline and sterile water can also be disposed of down the sink.
- Bio-medical waste is defined by OSHA as liquid or semi-liquid blood or other potentially infectious materials; contaminated items that would release blood or other potentially infectious materials in a liquid or semi-liquid state if compressed; items that are caked with dried blood or other potentially infectious materials and are capable of releasing these materials during handling. Items defined by this must be disposed of in a red bio-medical waste bag.



Element 8: Re-measurement

- Data from Stericycle was obtained for the months of February, March, and April of 2019. In these months, 43 boxes were picked up by Stericycle. In the same months in 2018, 76 boxes were picked up by Stericycle. The data indicates there was a 43.4% reduction in sharps and biomedical waste generated from the facility.
- Case count was also taken into consideration for the same months in 2018 and 2019. The cases performed from February-April of 2018 were 1147. Cases completed in the same months in 2019 resulted in 1102, or a 45 case difference, which would not have affected waste disposal results significantly.
- Re-negotiation of the contract with Stericycle minus the purchase of Drug Buster medication disposal systems resulted in a savings of \$1268.79 per month.

SHARPS AND BIOHAZARDOUS WASTE DISPOSAL



Element 9: Additional Corrective Action

- No additional corrective action initiated due to the goal set by the quality committee was a 25% reduction in waste. The data resulted in a 43.4% reduction, exceeding the committee's goal.

Element 10: Communication of Findings

- This study is concluded and closed. Sharps and biomedical waste will be monitored on a continual basis through Stericycle reports, and will be revisited if trends indicate action needed.

Acknowledgements

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