

Improvement of Biohazardous Waste Management Program at HHMI's Janelia Research Campus

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Outline

- Brief Introduction
- Janelia's Biohazardous Waste Management Program
- Problems and changes made to the program
- Pilot testing data and results
- Improvements and effectiveness of the new system
- Scaling up



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Introduction



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Biohazardous Waste Management Program at Janelia



All solid biohazardous waste was discarded in biohazard step cans.

Gloves

Disposable lab coats

Masks

Culture Dishes

Falcon tubes

Bench paper

Blood/Tissue samples

Animal Bedding

Tissues/towels

Eppendorf tubes

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Biohazardous Waste Management Program at Janelia



Sharps were placed in sharps containers of various sizes.

Razor Blades

Broken Glass

Glass Slides/Cover slips

Scalpels

Glass culture tubes

Pasteur pipettes

Micro-pipette tips

Syringes

Needles

Serological Pipettes

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Biohazardous Waste Management Program at Janelia



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The Problem



Risk of injury

- When removing the plastic liners from the step cans



High volume of waste generation

- Caused by inefficient use of sharps containers



Bad odor

- Caused by bins that were never changed

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What we did



Overall
evaluation of our
entire collection
process



Interviews with
members of the
labs



Discussion with
vendors



Cost analysis of
supplies

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The Plan



Eliminate all step cans and replace with MPW burn



Eliminate all large sharps containers.



Replace with MPW burn box.

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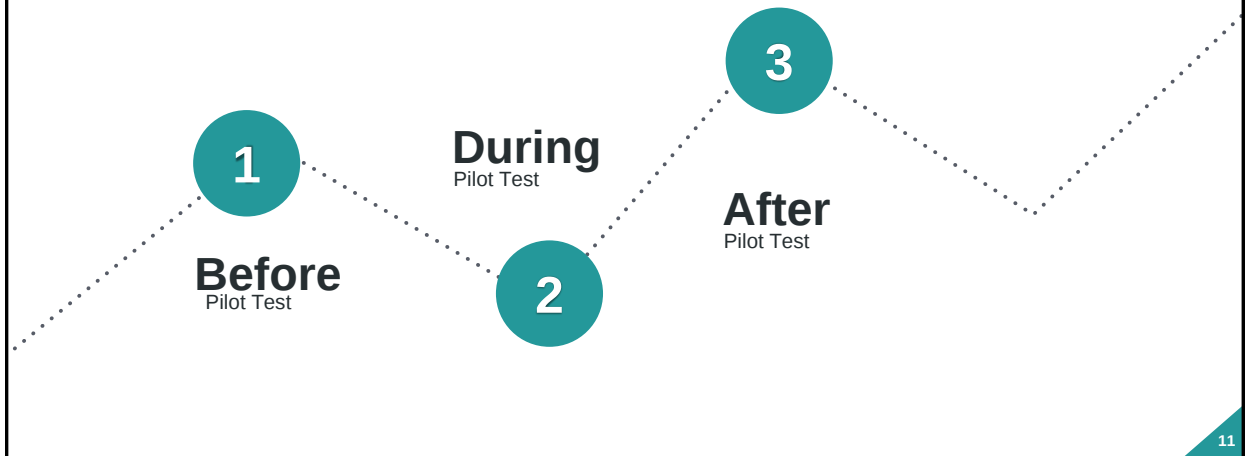
Pilot Test

In order for us to determine if the new strategy actually solves our problems, we performed a pilot test of the new strategy in a specific area of the building.



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Process



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Before pilot test

1

Selected the area based on the diversity of the labs

3

Communication strategy:

- Sent an email to all the users of the area
- Posted information around the area

2

Coordinated with bio waste vendor - changed service agreement

4

Tracked the generation of waste 2 months prior to the start of pilot test

Before pilot test

Information posted in pilot area

Lab Waste Disposal Guide

2-Gallon Sharps Container
 - Only "traditional sharps" (no gloves, liquids, chemical bottles, etc.).
 - Dispose of Pasteur pipettes, razor blades, scalpels, and needles.

Cardboard Biohazard Box
 - Dispose of all solid hazardous waste along with pipette tips and serological tips.
 - Not for uncontaminated waste.

Bio-bins *Only for labs with high use of serological pipettes*
 - Dispose of serological pipettes only.

Have any questions? Contact Safety.
 Call: ext.4200 or email: safety@janelia.hhmi.org




Waste metrics

Date	# of Boxes (32 gal)	# of 8gal Sharps	# of 2 gal Sharps
4/3 - 5/29	20.5	16	6

During pilot test:

1

Placed the cardboard boxes in the same location as the step-cans

3

Stopped stocking the Laboratory Supply Room (LSR) with 8-gallon sharps containers

2

Eliminated 8-gallon sharps containers

4

Track data: We tracked the waste generation and the consumption of sharp containers, separately

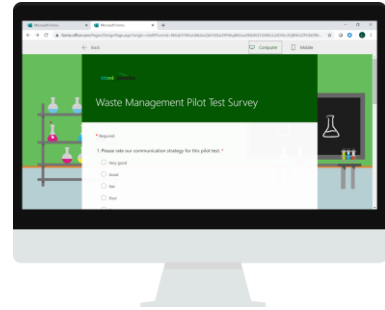
After pilot test

1

We created questions and sent them as a survey to the users of that area.

2

We used the same questions to interview some key people in that area.



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Results

Survey/Interview

- 60% of the people who answered the survey were very satisfied
- 84% felt confident when disposing bio-hazardous waste
- 40% said we should improve our communication strategy to scale the plan to the rest of the building

Some comments

- *"New system. The open-top biohazard bins are so much easier to use in cell culture settings."*
- *"We use sharps containers for pipettes and tips in cell culture and this box doesn't fit well in our space."*
- *"The open box can produce unpleasant odors"*

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Results

Waste metrics

Date	# of Boxes(18gal)	# of 8gal Sharps	# of 2 gal sharps
6/3 - 6/31	28	0	4

Cost analysis

Pre-pilot	unit	price/unit	cost
32-gal box	20.5	\$18.00	\$369.00
8-gal sharps	16	\$25.20	\$403.20
2-gal sharps	6	\$7.65	\$45.91
		Total	\$818.11
Pilot test	unit	price/unit	cost
18-gal box	28	\$17.00	\$476.00
8-gal sharp containers	0	\$25.20	\$0.00
2-gal sharp containers	4	\$7.65	\$30.60
		Total	\$506.60

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Results

Summary

- We saved \$311.50 in operational costs
- We reduced our plastic consumption by only using liners in the boxes and reduced the consumption of sharps containers

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Improvements based on feedback

US & E&S

Stand

Communication



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Scale up

- Scaling to the rest of the building
 - Every 2 months
- Currently do not have savings in terms of boxes
 - Step cans were disposed in MPW boxes



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Effectiveness



NO risk of injury



Reduction of plastic consumption and cost



Odor elimination

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Question s

