



Performing Hospital Waste Audits



















Why Conduct an Audit?











- > Protection of the environment;
- > Compliance with regulation and waste minimization goals set by federal, state and local governments;
- > Quantify existing waste volumes/ costs;
- > Identify waste minimization opportunities/ potential cost savings, program improvements, employee training needs, justify budget needs



Determine What Level of Audit







Facility walk through



 Identify where wastes are generated and how they flow through the facility



 Identify current practices and compliance with policies and regulations



Detailed waste stream analysis





Pre-Audit Planning Questions



Who will be responsible for the waste audit?



 Who will take part and work on the waste audit?



What will be the task of everybody involved?



What approvals are necessary?



Who needs to be notified?



Audit Scope









- Which waste streams will be covered?
- Which departments shall be visited?
- Who must be interviewed?
- Which information and data will be necessary?
- Which information and data shall be available after the waste audit?
- How will the results be evaluated and presented?



Audit Resources









- What kind of equipment will be needed during the waste audit? Is it available or must it be purchased?
- How much time will everybody conducting the waste audit need?
- How much time will departments be impacted for interviews, etc.?



Baseline Waste Audit







- > Identify quantities of waste generated.
- ➤ Identify current waste reduction, reuse and recycle activities.



> Identify current waste disposal costs.



➤ Analyze for opportunities for waste reduction and cost savings.











"You Cannot Manage What You Cannot Measure"

Lord Kelvin



Analyze Your Waste Streams



List all categories and subcategories of a specific waste stream



Determine who is responsible for each waste stream category – who manages it and who pays the bills



Use waste bills to calculate the amount (weight or volume) and cost of each waste stream



Waste Categories and Sub-categories

Solid Waste	Recycling	Reuse/Donation	RMW	Pharmaceuticals Pharmaceutical	HazWaste	Recycled HW
Solid Waste	Cardboard	Linen	General Infectious	Trace Chemo*	D001-Alcohol	Computers / electronics
C&D*	Paper, mixed	Furniture	Pathological	Bulk Chemo	D001-Xylene	Fluorescent lamps *
	Paper, shredded	Medical Equipment	Sharps	Pharmaceuti RCRA*	D002-Corrosive	X-ray film-Silver
	Newspaper	Medical Supplies★	Anatomical	Pharm - non-haz	D003-Reactive	Oil (cooking)
	Boxboard	Food donation			D009-Mercury	Oil (motor)
	Plastic, #1PET	Ice packs / coolers			D004-43 Toxic	Alcohol Recycling
	Plastic, #2 HDPE	Foam peanuts			D-Characteristic	Xylene Recycling
	Plastic, #4 Shrink wrap	Sharps containers«			F-Listed	Formalin Recycling
	Plastic, #5 polypropylene				K-Listed	Paint Recycling
	Plastic, #6 PS				P-Listed	
	Plastic, mixed				P-Listed	
	Plastic, mixed				U-Listed	
	Glass, clear				Pharmaceuti RCRA*'	
	Glass, colored					
	Glass, mixed					
	Steel cans					
	Aluminum cans	Transparencies				
	Mixed Metals	Ink jet cartridges				

Food waste (composting)

Pallets

Wood

Toner cartridges

Printer ribbons

C&D debris ★

Landscape (composting)



Benchmarking Data



Data sources:

- Invoices
- Manifests
- Haulers
- Contracts
- Purchasing



Challenges:

- Data housed in multiple departments
- Incomplete data /lack of transparent billing
 - May not have volumes
 - Lump sum billing
 - May need to estimate data





Assess Your Fees /Service Levels









- Do you understand your fees?
 - How are you charged? Per pound? Per container/tub? Per pick up?
- What is your pick up frequency?
- What are your container sizes?
- Are your containers full?
- How are each of your waste treated?
 - incineration, autoclave, landfill, recycling, HW incineration



Facility Walk Through









- General observations
 - Observation of container placement and content, signage, compliance by staff
 - Best management practices
- Interview staff
 - Discussion of waste practices
 - Knowledge of waste procedures, training received
 - Concerns, recommendations for improvements



Locations to Visit/Observe









Healthcare

- Environmental Services
 - MSW compactor areas, RMW storage, HW room, Recycling areas
- Material Management
 - Purchasing, Receiving Dock, Storeroom(s)
- Facilities/maintenance
 - Power plant, shops, maintenance
- Safety
 - HazMat storage areas, satellite accumulation
- OR/Surgical Services
- Patient Care Floors
- ICU/CCU areas
- Radiology
- Laboratory
- Pharmacy
 - Receiving area, waste collection areas, satellite accumulation areas
- Kitchen/food service areas:
 - Food prep, patient tray lines, waste collection areas, dining room
- Administrative Areas



Departmental Analysis









- Document the services carried out by the department
 - types of services, # staff, # beds, # treatment days, etc.
- Identify types of waste generated in the department.
- Observe how the different wastes are segregated and collected.
 - Query staff on waste practices, training received
- Identify equipment (containers, signs) used for waste management and disposal.
 - Observe container contents where feasible.
- Commend staff on good waste management practices and seek recommendations for program improvements.



Conducting a Detailed Waste Stream Analysis









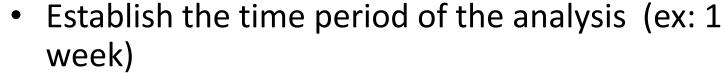
Solutions





Waste Stream Analysis Prep





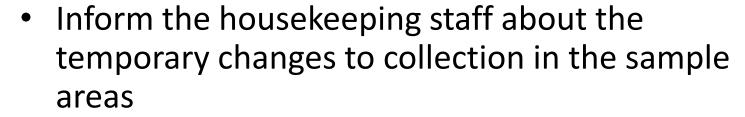


Identify the waste streams which will be surveyed





- Acquire the needed equipment (e.g. scale, containers, bags, etc.)
- Establish waste collection points







Waste Stream Analysis

- Collect the waste from the sample areas and transport to a predetermined storage point, separate from the normal storage places.
- Utilize proper PPE.
- Measure the different waste streams by volume and by weight, or percentage composition (once per 24 hours)
- Record /document data (quantitative, photos)



•Gather and include background metrics of the sample areas (e.g. patients treated per day, number of meals prepared, etc.)



Audit Results









Summarize observations





- Waste minimization strategies for specific areas of the facility
- Practices/policy improvements
- Budgetary requirements

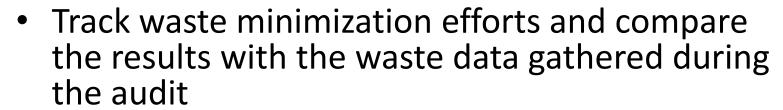






Moving Forward







Document results and look for opportunities for continuous improvement



Evaluate the waste minimization process to document success



 Institute policy directives incorporating improved waste minimization processes



 Plan new waste minimization pilot projects for further waste reduction













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