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

• Benchmark current waste disposal volumes and costs

• 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 waste types generated.
- 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
<table>
<thead>
<tr>
<th>Solid Waste</th>
<th>Recycling</th>
<th>Reuse/Donation</th>
<th>RMW</th>
<th>Pharmaceuticals</th>
<th>HazWaste</th>
<th>Recycled HW</th>
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<tbody>
<tr>
<td>Solid Waste</td>
<td>Cardboard</td>
<td>Linen</td>
<td>General Infectious</td>
<td>Trace Chemo*</td>
<td>D001-Alcohol</td>
<td>Computers/ electronics</td>
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<td>C&amp;D*</td>
<td>Paper, mixed</td>
<td>Furniture</td>
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<td>Bulk Chemo</td>
<td>D001-Xylene</td>
<td>Fluorescent lamps *</td>
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<td>Paper, shredded</td>
<td>Medical Equipment</td>
<td>Sharps</td>
<td>Pharmaceuti. - RCRA*</td>
<td>D002-Corrosive</td>
<td>X-ray film-Silver</td>
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<td>Newspaper</td>
<td>Medical Supplies *</td>
<td>Anatomical</td>
<td>Pharm - non-haz</td>
<td>D003-Reactive</td>
<td>Oil (cooking)</td>
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<td>Boxboard</td>
<td>Food donation</td>
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<td>Pharmaceuti. - RCRA*</td>
<td>D009-Mercury</td>
<td>Oil (motor)</td>
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<td>Sharps containers «</td>
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<td>Pharm - non-haz</td>
<td>P-Listed</td>
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<td>Pharmaceti. - RCRA**</td>
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<td>Wood</td>
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<td>C&amp;D debris *</td>
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<td>Pathological</td>
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Benchamarking 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

- 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
Waste Stream Analysis Prep

- Establish the time period of the analysis (ex: 1 week)
- Identify the waste streams which will be surveyed
- Identify the sample areas (which departments)
- Acquire the needed equipment (e.g. scale, containers, bags, etc.)
- Establish waste collection points
- Inform the housekeeping staff about the temporary changes to collection in the sample areas
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 waste volumes, cost data
  - Compare results with known industry data
- Summarize observations
- Make and prioritize recommendations
  - Waste minimization strategies for specific areas of the facility
  - Practices/policy improvements
  - Budgetary requirements
Moving Forward

• Track waste minimization efforts and compare the results with the waste data gathered during the audit
• 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
Questions?

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