

# Get Started - Conduct a Baseline Assessment

This baseline assessment—understanding what is generated and how much it costs—is the first step in improving waste management. Conducting a waste baseline is required in both the recycling and RMW reduction Goals. This how-to guide defines the various waste streams (see Defining Materials and Wastes in [Resources Section](#)), how to standardize material and waste data collection, how to normalize the data for comparison, and how to set waste targets for improved performance and associated cost savings. So let's get started:



## 1. Identify the team

The team could be a subcommittee of an existing green team or members of The Joint Commission Environment of Care's Hazardous Material and Waste Management subcommittee, and staff responsible for material removal,

invoice payment or contracting. The team may decide that an outside consultant, Practice Greenhealth or a service provider is needed as a partner. Or, the facility may feel prepared to accomplish this task on their own, without outside consult.

## 2. Engage Leadership

Leadership engagement and support are critical to long-term success and a cohesive strategy. Making the case for improved waste management may require team effort and the ability to demonstrate a return on investment. The Practice Greenhealth Sustainability Benchmark report can be used to show industry benchmarks. After seeing baseline

data and the costs involved in material and waste management, most leaders get on board with waste reduction programs. Waste reduction efforts offer some of the largest pay-backs of any sustainability programs.

### DON'T FORGET

- Batteries from biomed
- X ray film
- Kitchen grease
- Research labs
- Electronic equipment
- HIPAA documents
- Dental amalgam
- Cell phones, pagers
- Controlled substances
- Lead aprons

## 3. Understand Waste Streams

Health care waste management is more complex than ever, due to the growing types of wastes, including pharmaceutical wastes; state regulations; and the multitude of waste treatment options, including diversion and recycling. Refer to Practice Greenhealth or state and federal guidelines for detailed definitions of each waste stream. Keep in mind that waste definitions are open to interpretation, and that facilities within the same system may generate vastly different

categories of wastes due to variations in red bag waste definitions, recycling efforts and other factors. Refer to the accompanying document "Defining Waste Streams" for a standardized method of waste measurement, standard practices and benchmarks.

#### 4. Gather the Data

To calculate tons of waste and associated costs, identify the vendor or business partner for each waste stream and conduct a thorough invoice review. Contract and invoice review will enable the team to assess where the pounds or tons are reported and identify samples or estimates for each. Some materials may have no data associated with their removal. Reach out to departments throughout the organization to identify additional streams and the vendors and costs associated with them. For example, engineering, biomedical or laboratories may have their own vendors for special wastes, such as kitchen grease, x-rays, lead aprons, laboratory chemicals and placenta. Make sure these wastes are not overlooked in the facility's waste reduction plan.

**Accuracy Counts!** – While certain waste streams will be easier to capture, such as RMW (red bag waste) and compacted waste, others will require some work. For example, a facility may collect materials for recycling in reusable totes. Simply

weigh a sampling of the totes to obtain an average weight, and calculate by the number of totes exchanged each week. Most types of waste can be estimated with this method. It may take some time, but the accuracy of estimates based on a sampling of materials at the hospital far surpasses online industry conversions. Business partners may be able to help with reporting some weights, such as compacted, hazardous and RMW. If vendors resist providing this data, work with purchasing or consider identifying a new business partner. In some cases, loose waste pick-up or toter exchange may commingle material in a truck with material from numerous other sites, making specific weight reporting impossible. Talk with business partners to identify solutions or develop an in-house methodology for tracking materials before they are removed. Conversion factors, such as an estimate of pounds per cubic yard of material, should be a last resort, due to great disparity in the sector. See the accompanying document entitled "[Defining Waste Streams](#)" for conversion factors.

#### 5. Recycling Versus Diversions

Practice Greenhealth has years of experience with data collection around materials and wastes through the Environmental Excellence Awards. A close look at recycling versus diversion has resulted in some changes in the awards program and the need for clarification. While Practice Greenhealth values recycling, the awards are now designed to celebrate and quantify waste prevention through total waste per adjusted patient day, FTE or other normalizing factor in addition to recycling rates. Total waste is the sum of solid waste, hazardous waste, recycling and RMW. It would be a shame if waste prevention was lost in the data, which is why a measure of total waste management is so important. The [end of this document shares a recycling check list](#), which should clarify distinctions between the two. Standardization, also important, is also explained in the waste and material definitions in the resources section. While standardization may have little to do with the baseline data collection, it is an important feature in success waste management programming.

While a hospital may want to capture diversion activity and its impact, tracking diversion can be tricky. Commonly diverted items include reusable pallets and reusable dishware. Food donations, equipment donations and even single-use device reprocessing also fall in-to the diversion category. Reusable sharps containers will be reflected in the RMW rate and do not count toward recycling. Successes in these areas will show up in measures

of total waste or, for single-use devices, in red bag rates.

**Although some single-use devices and the reusable containers themselves are eventually recycled, they are not counted in recycling rates.** It's too hard to know the frequency of this recycling and its impact on individual sites. A vendor may report that 90 percent of single-use devices are recycled, but that doesn't mean that 90 percent of what a hospital reprocesses is recycled. The same holds true for sharps. A container may be reused 600 times before it is recycled; however, calculating that number for each customer is nearly impossible.



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## 6. Set up a System

Once waste stream costs and methodologies are identified, develop an ongoing tracking system. This may require file sharing or an intranet for inputting data on a regular basis from a variety of users, or shifting invoice responsibilities and data input to one individual. The process of identifying waste stream costs

may reveal opportunities for consolidation and the need for total waste management contracting that includes detailed, standardized measurement and reporting by numerous locations. If this is the case, implement a temporary strategy for ongoing data collection and recommend a contract and bid review for materials and wastes.

## 7. Track Material

The data can be tracked monthly or quarterly with the ultimate goal of a 12-month baseline for each location. The table below can be used to identify waste streams, contacts responsible parties. The team should set a deadline for the submission of data for each stream. The Less Waste Challenge requires this monitoring for three years; however,

Practice Greenhealth urges organizations to continue to track waste indefinitely. This data is critical in ongoing efforts to reduce volume and toxicity, and to shift wastes to less costly streams with improved waste stream segregation and staff training. The table below can help to identify service providers, data sources and a lead for each stream to form a reliable baseline.

| Waste/Material Type  | Pick up Frequency | Service Provider & contract details   | Data Source   | Internal Responsible party                 |
|--|-------------------|---|---|--|
| i.e. Regulated Medical Waste – includes disposable sharps containers | 3 X a week        | ABC Carting, Anywhere, State, Contact Name, Phone, Email, Web Site<br><br>Contract ends 12/31<br><br>Charged by the pound | Weights provided on monthly invoice, currently signed off by Director of Environmental Services, sampling of container weighed each year for quality assurance. | Name, Department of Environmental Services |

The following table provides a method for tracking the waste baseline, the challenge baseline requirement. The color codes correspond to the definitions in the attached document, “Defining Waste and Material Streams.” The table asks for tons per year and cost per year; however, providing percentage of total by weight and percentage of total by cost help identify the most expensive waste streams on a per- unit basis.

## 12 Months Waste Baseline Data

| Waste Category                  | Tons per Year | % of Total by Weight | Cost Per Year | % of Total by Cost |
|---------------------------------|---------------|----------------------|---------------|--------------------|
| <b>Municipal Solid Waste</b>    |               |                      |               |                    |
| <b>Recycling**</b>              |               |                      |               |                    |
| <b>Regulated Medical Waste*</b> |               |                      |               |                    |
| <b>Hazardous Waste</b>          |               |                      |               |                    |
| <b>Total</b>                    |               | 100%                 |               | 100%               |

\* Regulated Medical Waste (RMW) may be separated into two streams with one for incineration and one for “other” treatment. Some measure it all together. Feel free to add another line to break this in two. Ensure that sharps management is captured in this stream.

\*\* Universal Waste, if recycled, goes in the recycling stream. If removed as hazardous waste, it goes in the hazardous waste stream.

## 8. Analyze the Data & Set Measurable Goals

Once the waste table is filled out, with costs associated with each stream and percentage of total waste identified, targets and measurable goals can be set. Understanding the sector benchmarks for award-winning facilities and the costs associated with each stream helps quantify waste prevention, improved segregation and recycling. Many hospitals focus on the higher-cost streams first, such as hazardous waste and RMW. Keep in mind that hazardous waste is the most expensive by far, but it only accounts for about one percent of the total waste stream. RMW, the next most expensive, can offer cost savings through improved segregation for a target goal of 10 percent of total waste or five pounds per adjusted patient day. Goals can be qualitative or quantitative. Setting up a

## Average Waste Stream Generation Rates for Award Winning and Top Performing Facilities:

Better ➔ Best  
29.8% ➔ 47.2% Recycling  
6.5% ➔ 3.6% RMW  
0.5% ➔ 0.9% Hazardous Waste\*

\*The increase in hazardous material as “best” is an indicator of proper segregation of hazardous pharmaceutical waste and the resulting increase in hazardous waste generation.

process to continuously track the data is a legitimate qualitative goal because it provides an opportunity to improve the process. because it provides an opportunity to improve the process.

## 9 Track, Report and Continue to Monitor

When the team has identified each waste stream, and its associated tonnage and costs, the next step is to develop a process to continuously track and report this data. Some organizations enter the data to a share site; others identify a lead for all material and waste invoice review and tracking. The goal is to control and manage the process on an ongoing basis. Generate reports at least every quarter to establish targets. Tracking data in this way may also help uncover invoice errors, double billing and other cost-savings.

Percentages offer a relatively simple way to compare the facility’s performance to its award-winning peers and help identify priorities. (Refer to Practice Greenhealth Members’ Only Sustainability Benchmark report for more information.)

Adhering to Practice Greenhealth’s preferred reporting methods will help to standardize approaches and ensure accurate data collection and comparisons for the sector. Reporting standards will continue to evolve with new programs, regulations approaches.

**Diversion and Source Reduction checklist: This is for documentation but these weights do NOT go in the baseline.**

The following items identify opportunities for red bag reduction or waste prevention, but their data is captured in the **total waste** per FTE, staffed bed or adjusted patient day metric through its impact on waste generation. These items should not be included in the recycling table because they are diversion activities, not recycling

activities. These diversion activities are equally (if not more) important than recycling because they extend product life and reduce consumption.

- Single-use device reprocessing
- Reusable totes for material delivery, eliminating cardboard boxes
- Book donation
- Equipment donation and refurbishment
- Computer donation
- Food donation
- Furniture donation
- Ice pack/Cooler reuse
- Medical supplies and equipment donation
- Pallet reuse
- Reusable Sharps Containers (listed in RMW)
- Reusable linens (surgical drapes and gowns, isolation gowns, scrubs...)
- Regulated Medical Waste shipping containers
- Other reusable products: hazardous waste or pharmaceutical waste collection bins, rigid sterile cases for surgical items, surgical basins/ biowaste tubs, trocar (tubing).

### SAMPLE GOALS:

- Go out to bid for total waste management
- Increase recycling rate to 15 percent
- Reduce red bag generation to less than 10 percent of total waste