



Waste

Introduction

Practice Greenhealth recommends **comprehensive waste tracking** as a starting point for any healthcare institution looking to improve its environmental footprint. Understanding the breakdown of both cost and weight for different waste categories can be one of the easiest strategies to identify areas of opportunity and low-hanging fruit. Beyond waste data, understanding how waste can be prevented, or shifted from a more environmentally-intensive (and expensive) waste stream to a less environmentally intensive waste stream (e.g., from **regulated medical waste** into **recycling**) is key to truly reducing the facility's waste footprint.

Baseline Year: The facility's baseline year is generally the **first year the facility started tracking waste data**. Some facilities use the first year they apply for an award. If 2019 is your first year of waste tracking, please enter data in both the **Baseline Year** and the **Current Year** column (leaving the **Previous Year** column **blank**), and it will become your baseline for next year's award data.

1. Baseline Year:

The waste data in this section requires **12 consecutive months of waste data**. While energy data must be tracked in a calendar year, waste data can utilize a fiscal year if necessary. We ask that you please use the **same 12 months consistently** each year you apply, so we can compare year-to-year totals effectively.

Solid Waste

Table A. **Solid Waste**

(Please do not use commas or \$ signs.)

Solid Waste	TONS per Year Current	Annual Costs Current
Solid Waste	2. <input type="text"/>	3. <input type="text"/>
Non-RCRA Pharmaceutical Waste (MSW)	4. <input type="text"/>	5. <input type="text"/>
Total Solid Waste	6. 0 <input type="text"/>	7. 0 <input type="text"/>

8. How does your facility dispose of its regular (non-pharmaceutical) **solid waste**?

- ☐ Landfill
☐ Municipal Waste Incinerator
☐ Waste-to-Energy Incinerator
☐ Other

Recycling

9. Does the facility recycle clinical/**medical plastics**?

- ☒ Yes
☐ No

9.a Which clinical plastics are being recycled by the facility (select all that apply):

- ☐ Irrigation bottles
☐ Skin prep solution bottles
☐ Trays
☐ Overwraps
☐ Rigid inserts

- ☐ Blue wrap
☐ Tyvek
☐ Basins
☐ Urinals/Bedpans
☒ Other

9.a.a Please describe any other plastic items being recycled:

Recycling Profile

Please enter the facility's individual **Recycling** Totals in **Appendix A**. The data will self-populate in the **Current Year** column in Table B.

PLEASE NOTE: The tonnage and costs for Current Year will be autopopulated from Appendix A.

Table B. Recycling

Recycling Streams	TONS per Year Current	Annual Costs Current
Recycling (Current Year data will be entered from Appendix A)	10. 0 <input type="text"/>	11. 0 <input type="text"/>
Universal Waste (Current Year data will be entered from Appendix A)	12. 0 <input type="text"/>	13. 0 <input type="text"/>
Recycling Total	14. 0 <input type="text"/>	15. 0 <input type="text"/>

16. This is the value of total annual **recycling** costs that will be used in calculating total waste cost percentages in Table K at the bottom of this page. Costs will be used unchanged, but all revenue will be changed to zero.

Waste Reduction Activities

17. Has the facility developed an **internal reuse** program or strategy for office supplies, clinical products and equipment, and furniture before making these materials available for external donation?

- ☐ Yes
☐ No

18. Has the facility developed an equipment and supplies **donation** program (domestic or abroad) for materials, equipment and furniture that can no longer be used internally? The Catholic Health Association provides an excellent discussion and resources on **Medical Surplus Recovery**.

- ☒ Yes
☐ No

18.a Please indicate which items are routinely donated:

- ☐ Unexpired/unopened consumable clinical supplies
☐ Expired/opened consumable clinical supplies
☐ Capital medical equipment
☐ Electronics
☐ Furniture
☐ Linens
☐ Other supplies

19. Has the facility implemented a **paper reduction** program?

- ☒ Yes
☐ No

19.a Please indicate which activities the institution has pursued to gain those reductions. Please select all that apply.

- ☐ Reduced network printers
☐ Made double-sided printing the default on printers/copiers
☐ Reduced number of automatically printed reports
☐ Implemented EMR/EHR system

- ☐ Created digital signage
☐ Increased electronic meetings
☐ Engaged supply chain around paper reduction
☒ Other

19.a.a Please describe other paper reduction efforts:

Less Food Waste

It is estimated that **10% to 15%** of an average hospital's waste is comprised of food waste. The US EPA and the USDA announced a partnership, calling on businesses to commit to food waste reduction by 50% by 2030. As a result, Practice Greenhealth developed resources around **Less Food to Landfill** intended to mobilize the health care community around the opportunity to reduce food waste, reduce methane gas associated with food breakdown in landfills, and feed hungry people.

Applicants may answer the questions in this section on either the Food page or the Waste page and answers will be copied to the other page. The questions will be scored on the Waste page. The aim is to ensure Environmental Services and Food Services are connected around the management and reduction of this important waste stream.

31. Is the facility working on the **reduction of food waste**?

- ☒ Yes
☐ No

31.a Does the facility have a **food waste reduction plan or policy** that is implemented and tracked?

- ☐ Yes
☐ No

32. Has the facility undertaken any efforts to **divert food waste** from the landfill or incinerator?

- ☐ Yes
☐ No

Regulated Medical Waste

Please indicate the facility's **Regulated Medical Waste** totals in **Table C** below (enter a numerical response). If you cannot break out one of the waste types, please leave it blank and use the comments box to indicate which waste stream it is combined with; do not enter zero. If you are using a vendor that uses a **flat fee for integrated waste removal** (e.g., RMW and **solid waste** go out at the same price per lb), please enter your **tonnage**, but **DO NOT** include your cost data in **Table C** below, as it will skew the data set. All applicants must fill out **Current Year** tonnage and costs. If this year is your baseline year (e.g. first year of collecting accurate RMW data), please enter your **Current Year** totals in the **Baseline Year** column as well, but leave the **Previous Year** column **blank**.

RMW Treated Onsite or Offsite:

Please include **all general RMW** in this number, including any RMW that is treated onsite and landfilled. If the facility normally combines treated RMW with its **solid waste**, please estimate weight or contact Awards Technical Assistance for guidance at awards@practicegreenhealth or 888-378-2259.

Incinerated RMW

Please include any RMW that is incinerated, such as pathology waste, trace chemotherapeutic waste, or any waste that is segregated and removed by a licensed hauler for **medical waste incineration**. This category may be very small.

Sharps

Sharps waste is typically tracked as a separate waste stream by **regulated medical waste** haulers and should be entered in the Sharps category. If sharps are incinerated, they can be included in the **Incinerated RMW** category, but it should be noted in the comments field that the waste streams are combined. If the facility uses a reusable sharps container service, make sure the sharps disposal data does not include the **weight of the containers**.

Non-RCRA Pharmaceutical Waste

Non-RCRA pharmaceutical waste does not meet the EPA or state agencies' definition of hazardous waste but may still be dangerous to human health and the environment. Many health care institutions choose to use a vendor to manage this waste stream as incinerate-only to protect health. This waste stream is typically managed in a blue or white pharm waste container.

This waste stream can be incinerated as **municipal solid waste** (if so please track in **Table A**) or as **medical waste** (please track in **Table C**.) Please do not enter non-RCRA pharmaceutical waste in both tables **or it will be double-counted**! All Non-RCRA pharmaceutical waste data entered in either Table A or Table C will be **autopopulated in Table E. Pharmaceutical Waste** below.

*****If your facility does NOT source-segregate non-RCRA pharmaceuticals into separate containers for disposal with a licensed hauler, DO NOT enter any data for non-RCRA pharm waste into either Table A or C. Please leave the cells blank.**

Table C. Regulated Medical Waste

Regulated Medical Waste Stream	TONS per Year Current	Annual Costs Current
RMW (treated onsite or offsite)	22. <input type="text"/>	23. <input type="text"/>
Sharps	24. <input type="text"/>	25. <input type="text"/>
Non-RCRA Pharmaceutical Waste	26. <input type="text"/>	27. <input type="text"/>
Incinerated RMW	28. <input type="text"/>	29. <input type="text"/>
RMW total waste	30. 0 <input type="text"/>	31. 0 <input type="text"/>

RMW Waste Metrics Table

32. Operating Rooms: CHC 0 <input type="text"/>	33. Outpatient Visits: 0 <input type="text"/>	34. FTE: 0 <input type="text"/>
35. Tons of RMW per OR (The median value was 2.6; data generally ranged from 1.7 to 23) 0 <input type="text"/>	36. Pounds RMW per Outpatient Visit (Values generally ranged from 0.013 to 0.13.) 0 <input type="text"/>	37. Pounds RMW per FTE (The median value was 19.5, values generally ranged from 1.3 to 63.8) 0 <input type="text"/>

38. Does the facility incinerate any portion of its **regulated medical waste** (RMW)?

- ☒ Yes
☐ No

38.a Please indicate which medical waste streams are incinerated:(Please select all that apply)

- ☐ General RMW
☐ Path/Chemo
☐ Sharps
☐ Non-RCRA Pharm
☐ Other

39. Does the facility disinfect/treat its RMW using **onsite technology**?

- ☒ Yes
☐ No

Please do not include fluid management systems that empty to the sanitary sewer in this question.

39.a Which of the following **technologies** does the facility use to treat RMW onsite? (Select one).

- ☐ Autoclave
☐ Rotoclave
☐ Chemical disinfection
☐ Incineration
☐ Other

Please do not count autoclave(s) for Sterile Processing or laboratory. Only report primary onsite disposal method for RMW.

39.b If the facility treats its RMW onsite, this treated waste is disposed to:

- ☐ Landfill
☐ Municipal waste incineration
☐ Waste-to-energy incineration
☒ Other

39.b.a Please describe how treated waste is disposed of:

39.c How does the facility **track its RMW volume or weight** if it treats RMW onsite?

- ☐ The waste is weighed manually.
☐ The equipment weighs the material and the facility tracks this weight.
☐ It is estimated and tracked.
☐ The treated RMW is considered part of solid waste volume.
☐ The facility does not track this weight.
☒ Other

39.c.a Please describe other method to track waste:

39.d Does the facility track the cost of treating RMW in-house?

- ☒ Yes
☐ No

39.d.a The facility includes these costs of treating RMW in-house

- ☐ Power/utilities
☐ Water/sewer
☐ Staff time
☒ Other

39.d.a.a Please describe tracking of costs of treating RMW in-house:

RMW Reduction/Minimization Strategies

40. Has the facility **eliminated** the standard use of red bag waste (RMW) containers **in regular patient rooms**?

- ☐ Yes
☐ No

41. Has the facility implemented a **Reusable Sharps Container** program?

Yes

41.a How many **tons of plastic** were diverted from the landfill (or other disposal) as a result of the reusable sharps container program?

41.b What are the cost-savings (actual or estimated) from diverting reusable sharps containers from the landfill?

42. Has your facility implemented a medical device reprocessing program with an FDA-approved third party reprocessor?

- ☐ Yes
☐ No

A successful medical reprocessing program includes many patient care areas as well as the **operating room**. To simplify the application process, Practice Greenhealth is collecting all data pertaining to SUD reprocessing on the **Greening the OR section** of the Partner for Change application. Please enter all data pertaining to your facility's reprocessing collection and purchasing program - inside and outside the **operating room** - on that page.

Pharmaceutical Waste

Non-RCRA Pharmaceutical Waste

Segregating non-RCRA regulated pharmaceutical waste for incineration is currently considered a best management approach. For facilities using a pharmaceutical waste vendor (not Reverse Distribution), this may be a white container--not to be confused with the container for trace chemotherapy. **Non-RCRA Pharmaceutical Waste** data is entered in **Table A** (if disposed of through municipal waste incineration) or **Table C** (if disposed of through RMW incineration). Data from Tables A or C will autopopulate **Table E. Pharmaceutical Waste** below. Pharmacy, Environmental Services, EH&S or your pharmaceutical waste vendor are good resources to identify the waste pharmaceutical tonnage.

If the hospital is NOT source segregating non-RCRA pharmaceuticals into a separate container, do not report a number in either Table A or Table C.

RCRA-Regulated Hazardous Pharmaceutical Waste

RCRA hazardous pharmaceutical waste is comprised of waste that is either listed as hazardous or meets the characteristics of hazardous waste in

EPA's Resource Conservation and Recovery Act (RCRA) or via state agency. This waste stream should not be confused with red bag or "biohazardous" waste. For facilities using a pharmaceutical waste vendor (not Reverse Distribution), this may be a blue or black container.

Please enter the facility's RCRA Hazardous Pharmaceutical Waste totals **in tons** in Table E below. Entering RCRA Hazardous Pharm Waste data in this table will auto-populate Table G. Hazardous Waste below. Please also see the **NIOSH List of Hazardous Drugs in Healthcare Settings**.

All applicants must enter **Current Year** tonnage and costs. If this is the first year for which you have accurate pharmaceutical waste data, please enter your **Current Year** totals in the **Baseline Year** column as well (but leave the **Previous Year** column **blank**). If the facility does not segregate or track a particular waste type, leave that space blank and identify any combined waste streams in the comments box. **Do not enter zeros.**

Enter data in tons. Pounds can be easily converted to tons by dividing poundage by 2000.

Table E. Pharmaceutical Waste

Pharmaceutical Waste Stream	TONS per Year Current	Annual Costs Current
RCRA-Hazardous Pharmaceutical Waste	<u>43.</u> <input type="text"/>	<u>44.</u> <input type="text"/>
Non-RCRA Pharmaceutical Waste (MSW)	<u>45.</u> <input type="text"/>	<u>46.</u> <input type="text"/>
Non-RCRA Pharmaceutical Waste (RMW)	<u>47.</u> <input type="text"/>	<u>48.</u> <input type="text"/>
Total Pharmaceutical Waste	<u>49.</u> <input type="text"/>	<u>50.</u> <input type="text"/>

Table F. Pharmaceutical Waste Metrics (These numbers are only a rough guideline)

Total Pounds of Pharmaceutical Waste per Outpatient Visit	Total Pounds of Pharmaceutical Waste per FTE
<u>51.</u> (The median value was 0.006 pounds per outpatient visit; values generally ranged from 0.001 to 0.02) <input type="text"/>	<u>52.</u> (The median value was 0.28 pounds per FTE; values generally ranged from 0.07 to 4.88) <input type="text"/>

53. If the facility has **not provided data for Non-RCRA Pharmaceutical Waste**, how is the facility is currently handling waste pharmaceuticals that are not regulated as Hazardous Waste (such as antidepressants, statins, antibiotics, etc.): Please select all that apply.

- ☐ We treat all pharm waste as RCRA-hazardous to better protect human health and the environment
☐ Pharm waste is being disposed of in red bags or sharps containers
☐ Pharm waste is going down the drain
☐ Pharm waste is going into clear trash bags (solid waste)
☒ Other
☐ I don't know

53.a Please explain other methods for disposing of non-RCRA pharmaceuticals:

54. Please indicate if the facility taken any measures to **reduce the generation** of pharmaceutical waste in 2019:

- ☐ Staff education
☐ Inventory management
☐ Implemented a samples policy
☐ Monitored dating and utilized stock rotation for emergency syringes
☐ Prescription review
☐ Primed and flushed chemotherapy IV lines with saline solution
☐ Replaced prepackaged unit dose liquids with patient-specific oral syringes
☒ Other

54.a Please describe other measures taken to reduce pharmaceutical waste:

Hazardous Waste

Please enter the facility's Hazardous Waste total in tons in **Table G. Hazardous Waste** below. All applicants must enter **Current Year** tonnage and costs. If this is the facility's first year of tracking comprehensive waste data, please enter the hazardous waste tonnage from **Current Year** into the **Baseline Year** column as well (but leave the **Previous Year** column blank).

Do not enter zeros for any year. All health care facilities generate some amount of hazardous waste.

Converting to Tons

If your hazardous waste is in gallons or a mix of gallons and pounds, please convert to tons. It is most accurate to convert gallons to tons using the specific gravity of the waste liquid. However, if this is unavailable, convert gallons to tons using a general conversion factor of 8.35 lbs=1 gallon (e.g., there are approximately 8.35 pounds in a gallon of liquid). Pounds can be easily converted to tons by dividing poundage by 2000.

RCRA-Regulated Pharmaceutical Waste totals will autopopulate from Table E.

RCRA-Regulated Hazardous Waste

Please note that your facility's hazardous waste tonnage **should not be zero**.

Hazardous waste includes waste solvents, lab fixatives and stains, spill clean-up residue, lab packs, refrigerants, or any "listed" or "characteristic waste" per RCRA regulations. Check with your Laboratory Manager, Pharmacy Director, Safety Director, Hazardous Materials Coordinator, hazardous waste hauler, Accounts Payable, or review waste removal manifests to identify hazardous waste removal documentation that will provide you with the data needed for this section. **Examples of hazardous waste** from the clinical laboratory can be found at: **Clinical Laboratory Waste**

Table G. Hazardous Waste Table

Hazardous Waste Stream	TONS per Year Current	Annual Costs Current
RCRA-Regulated Hazardous Waste	<u>55.</u> <input type="text"/>	<u>56.</u> <input type="text"/>
RCRA-Regulated Hazardous Pharmaceutical Waste	<u>57.</u> 0 <input type="text"/>	<u>58.</u> 0 <input type="text"/>
Total Hazardous Waste	<u>59.</u> 0 <input type="text"/>	<u>60.</u> 0 <input type="text"/>

Hazardous Waste Minimization Activities

61. Does the facility contract for, or perform internally, a **hazardous chemical/material audit** by hospital department and update at least annually?

- ☒ Yes
☐ No

61.a Please attach hazardous chemical/material audit

62. Has the facility established a contract with a **certified electronics waste/recycling vendor** that is **certified to e-Stewards** (or subcontractors that use e-Stewards certified vendors) for legal and environmentally responsible electronics (or e-waste) management and **recycling**?

Yes

Please enter tonnage and cost for **electronics recycling** in **Appendix A**

63. How does the facility handle its fluorescent lamps?

Other

63.a Please describe process to handle fluorescent lamps:

Important Note: The act of crushing fluorescent lamps releases mercury vapor into the atmosphere and is not recommended by the EPA or Practice Greenhealth. Crushed lamps must be removed as hazardous waste by a licensed hazardous waste hauler and cannot be counted toward **recycling** or **Universal Waste** totals. Learn more at **EPA's Mercury Lamp Drum Top Crusher Study (2006)**.

64. Does the facility recycle batteries?

- ☒ Yes
☐ No

64.a Please indicate which of the following types of batteries you recycle:

☐ Ni-Cd

- ☐ Lead-acid
☐ Lithium ion
☐ Alkaline
☐ Mercuric oxide
☐ Ni-MH
☐ Other

Please indicate tonnage and cost for the selected batteries in **Appendix A**.

65. Does your facility have an **onsite laboratory**?

- ☒ Yes
☐ No

65.a Has your facility done any work to green its laboratory?

- ☐ Yes
☐ No

65.b Does the facility **recycle, reprocess or distill solvents, alcohols or other chemicals** from the lab (such as xylene, alcohols or formalin)?

- ☐ Yes
☐ No

Waste Summary

The following tonnages and costs have been **automatically calculated** based on the information that was provided in Tables A, B,C, and G. If the numbers do not look accurate, check the tonnage and costs entered in those Tables.

Table I. Total Waste Tonnage and Cost (comprised of **Solid Waste**, **Recycling**, RMW and Hazardous Waste)

	Total Tonnage (Current)	Total Cost (Current)
Total Waste	66. 0	67. 0

Table J. Total Waste Metrics

Based on the information above, the facility's total tons of waste per OR is:	Based on the information above, the facility's total pounds of waste per FTE is:	Based on the information above, the facility's total pounds of waste per outpatient visit is:
68. The median value was 76.6; values generally ranged from 28 to 296) 0	69. (The median value was 1394; values ranged from 506 to 3274) 0	70. (The median value was 3 pounds of waste per outpatient visit; values ranged from 1 to 5) 0

Table K. Total Waste Percentages

	% Waste (Current)	% Cost (Current)
Solid Waste [from Table A]	71. 0	72. 0
Recycling [from Table B]	73. 0	74. 0
RMW [from Table C]	75. 0	76. 0
Hazardous Waste [from Table F]	77. 0	78. 0

Other Waste Program Successes

Please use the space below to describe your **most successful and/or innovative waste minimization, reduction, recycling, medical waste or hazardous waste management program(s)** in 2019. Practice Greenhealth not only scores these questions but also uses them to **identify great case studies** to share with the sector. Environmental benefit and cost-savings data appreciated. Please use complete sentences.

79. Waste Success 1:

80. Please attach any additional documentation (optional) for Waste Success 1:

81. Waste Success 2:

82. Please attach any additional documentation (optional) for Waste Success 2:

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