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TEST PRACTICE GREENHEALTH - HEALTHCARE FACILITY
WITH BEDS AND ORS — no.1682810

Greening the OR - 2016: Greening the OR

Introduction

Between 20 and 30% of a hospital's waste stream may be generated in just one department-- Surgical Services. Greening the OR is a Practice Greenhealth initiative focused on providing concentrated sustainability support and assistance to a department that generates a significant portion of the hospital's environmental footprint. The Greening the OR Initiative aims to improve worker and patient safety, increase efficiency, and reduce cost while concurrently reducing waste, energy and environmental impact. Because an increasing number of facilities have begun to zero in on environmental innovations in this space, Practice Greenhealth wants to recognize the great work happening in **operating rooms** around the country.

New in 2016 Practice Greenhealth is introducing a stand-alone **Greening the OR Recognition Award** that recognizes a baseline set of achievements in reducing the environmental impact of the surgical department. Any Practice Greenhealth member health care facility with **operating rooms** – whether acute inpatient hospital or ambulatory surgery center – is eligible for and encouraged to apply for this award by [opting in>](#) and [completing this page](#).

Practice Greenhealth will continue to recognize the [\(one\) outstanding performer](#) in Greening the **Operating Room** with its **Greening the OR Leadership Award** and the [top 10 performers](#) through its **Greening the OR Circle of Excellence**.

1. Does your facility have a sustainability champion or leader in the OR?

- ☒ Yes
☐ No

1.a Name:

1.b Title:

1.c Email:

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Waste Segregation & Management

Proper waste management is critical to any successful environmental stewardship program, but it is especially important within the **operating room**. **The OR can account for 30% of a facility's overall waste and more than half of its regulated medical waste.** There are strategies to reduce the amount of waste generated by the OR, but it's also important for facilities to ensure that the waste is being properly segregated to maximize **recycling** and reduce cost. Please use this section to highlight the waste segregation strategies implemented by the surgical department.

You may leave a requested data point blank, but please **do not enter zeros. Enter savings as a positive number.**

2. Does the facility have a process to **divert pre-incision (prior to the case)** (non-pharmaceutical waste) from the **regulated medical waste stream** into the **solid waste** stream for non-infectious waste disposal?

- ☐ Yes
☐ No

3. Does the facility have a process to **segregate** non-infectious **solid waste** from the **regulated medical waste** stream **during and after the procedure**?

- ☐ Yes
☐ No

4. Does the facility **utilize a fluid management system** that empties directly into the sanitary sewer as a means to reduce exposure to bloodborne pathogens and reduce waste?

- ☒ Yes
☐ No

4.a Does the facility utilize a **reusable canister fluid management system**?

- ☒ Yes
☐ No

Please share any associated **cost savings** in Table A:

Table A. Fluid Management Avoided Waste and Cost Savings

Avoided waste (tonnage)	
Avoided waste disposal fees from disposable canisters	
Avoided purchase cost of disposable canisters	
Avoided purchase cost of chemical solidifiers (if applicable)	

Other Benefits:

4.a.e

The following questions on **recycling clinical plastics** are also asked on the **Waste** page.

5. Does the facility **recycle clinical/medical plastics** in the OR?

- ☒ Yes
☐ No

5.a Please select all clinical/**medical plastics** being **recycled in the operating room**:

- ☐ Irrigation bottles
☐ Skin prep solution bottles
☐ Trays
☐ Overwraps
☐ Rigid inserts
☐ Blue wrap
☐ Tyvek
☐ Basins
☐ Urinals/Bedpans
☐ Other

5.b Is the facility **tracking** the weight of **medical plastics** recycled specifically from the OR?

- ☒ Yes
☐ No

What is the weight of **medical plastics** (in tons) recycled in 2015 in the OR?

Tons

Single Use Device Reprocessing

Reprocessing of single-use medical devices (SUDs) goes beyond the **operating room** and includes many other patient care areas. To simplify, Practice Greenhealth is asking all questions pertaining to SUD reprocessing on the Greening the OR page in 2016. Please enter all SUD reprocessing data below.

6. Has your facility implemented a single-use device (SUD) reprocessing program by an FDA-approved third party reprocessor?

Yes

Please indicate which **department(s)** your facility has implemented a reprocessing program in by selecting Yes or No below.

Table B1. Reprocessing by Department

Department	Collect Reprocessed Devices	Purchase Reprocessed Devices
OR	6.a <input type="radio"/> Yes <input type="radio"/> No	6.b <input type="radio"/> Yes <input type="radio"/> No
EP/Cath	6.c <input type="radio"/> Yes <input type="radio"/> No	6.d <input type="radio"/> Yes <input type="radio"/> No
Patient Care	6.e <input type="radio"/> Yes <input type="radio"/> No	6.f <input type="radio"/> Yes <input type="radio"/> No
Other	6.g <input type="radio"/> Yes <input type="radio"/> No	6.h <input type="radio"/> Yes <input type="radio"/> No

Please indicate which **device type(s)** your facility is reprocessing by selecting **Yes or No** below. Select **No** if your facility did not collect/purchase reprocessed devices in that category in 2015.

Table B2. Reprocessing by Device Type

Device Category	Collect Reprocessed Devices	Purchase Reprocessed Devices
Non-Invasive	6.i <input type="radio"/> Yes <input type="radio"/> No	6.j <input type="radio"/> Yes <input type="radio"/> No
Invasive	6.k <input type="radio"/> Yes <input type="radio"/> No	6.l <input type="radio"/> Yes <input type="radio"/> No

*Vendor reports differ, but generally devices are categorized as Non-Invasive and Invasive. Some vendors may break out Invasive by department or add a third category (Cardiac). For the award application purposes, enter all non-invasive information in the Non-Invasive category and include the rest as Invasive. For additional information and step-by-step help, please click [here](#).

Please enter the **total** avoided waste in pounds (**Lbs**) in 2015 as a result of your facility's reprocessing collection program below.

Table B3. SUD Reprocessing Collection Data

SUD Reprocessing Collection Savings	Total
Weight of devices collected (in pounds)	<input type="text"/>
Weight of devices collected converted to tons	0
Avoided waste disposal costs	<input type="text"/>

New this year, Practice Greenhealth would like to capture the reprocessing purchasing power of the health care sector through the dollars spent on reprocessed devices. In the table below, please enter the total dollars **spent** on purchasing reprocessed devices.

Table B4. Dollars (\$) Spent on Reprocessed Devices

Category	2014	2015	Change
Non-Invasive	<input type="text"/>	<input type="text"/>	0
Invasive	<input type="text"/>	<input type="text"/>	0

Total	0	0	0
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*Please know that this "Change" field is simply to capture a year to year difference. There is no normalization factor included in this calculation. Difference in case volume, contracts, etc. may play a big part in this difference. A positive number indicates more spent in 2015 than 2014. A negative number indicates less spent in 2015 than 2014.

Please Enter Total \$ Saved on Purchased Reprocessed Devices in the Table Below.

Table B5. Reprocessing Purchase Savings

Reprocessing Program Savings	2014	2015	Change
Non-Invasive Devices			0
Invasive Devices			0
Total	0	0	0

*Please know that this "Change" field is simply to capture a year to year difference. There is no normalization factor included in this calculation. Difference in case volume, contracts, etc. may play a big part in this difference. A positive number indicates greater savings achieved in 2015 than 2014. A negative number indicates less savings in 2015 than 2014.

In the table below, please enter the **compliance** or **variance** or **purchase efficiency** data. This information provides some insight into how well your facility's reprocessing program is doing on the contracting and purchasing side by comparing the number of devices collected and available to buy back to the number of devices the facility actually buys back.

*Vendor terminology differs. The two terms that may be found on reports are "**Variance**" or "**Purchase Efficiency**". This data is tracking the number of devices the facility collected for reprocessing that were then available to buy-back, and the percentage of those devices available to buy-back that the facility purchased. For some vendors, a number above 100% is possible if your facility is buying more reprocessed devices made available than what was actually collected at that facility. Please ask your vendor for assistance on this section. For additional information and step-by-step help, please click [here](#).

Table B6. Reprocessing Purchase Efficiency

Category	Variance/Compliance/Purchase Efficiency
Total %	6.ah <div></div>

This number is a measured metric for the **Greening the OR application**. If you have trouble finding this number, please review the PGH Resource on Greening the OR or contact [Kaeleigh Sheehan, GOR Program Manager](#) for assistance. **Please do not enter % or \$ signs in table above or it will give you a validation error message.**

- 7.** Please attach any related **reprocessing policies** in place at the facility or system level. You may describe the policy as part of your answer in the box provided above for successes, in Question 8 if you desire.

- 8.** Is your facility participating in the **Reprocessing Goal** of the **Smarter Purchasing Challenge** of the Healthier Hospitals program?

- ☒ Yes
☐ No

8.a Please describe any progress toward this goal:

Waste Reduction in the OR

Identifying opportunities to eliminate unnecessary waste from the **operating room** waste stream can help facilities reduce upfront purchase costs as well as avoid waste disposal costs, and reduces the amount of waste requiring disinfection/treatment. Please highlight any strategies or projects the facility has utilized to reduce the amount of waste leaving the OR, including reducing unnecessary supplies, better inventory tracking, using reusable or reprocessable equipment, and more.

- 9.** Does the facility **reformulate OR kits**--removing supplies not typically used--to reduce purchase and disposal fees for excess supplies, and decrease the environmental impact of manufacture and disposal of those supplies?

☒ Yes
☐ No

Please fill in Table C. Please enter the number of **types** of kits the facility uses (e.g., 32 different types of custom kits, of which, 28 types were reviewed).

Table C. OR Kit Reformulation Waste and Supply Savings

Total number of OR Kit Types	<input type="text"/>
Number of Kit Types Reviewed	<input type="text"/>
Percent of Kit Types Reviewed	<input type="text" value="0"/>
Optional:	<input type="text"/>
Avoided Purchase Cost of Unnecessary Supplies	<input type="text"/>
Avoided Waste Disposal Savings (\$)	<input type="text"/>
Other Savings	<div>9.f</div> <input type="text"/>

- 10.** Does the organization have a process in place to regularly **compare, review and update surgeon preference cards** for the same type of procedure?

☒ Yes
☐ No

10.a Please describe:

- 11.** Is your facility participating in the **OR Kit Review Goal** of the **Smarter Purchasing Challenge** of the Healthier Hospitals program?

☒ Yes

☐ No

11.a Please describe any progress toward this goal:

12. Does the facility purchase **reusable surgical items** where environmentally and clinically preferable?

Yes ☐

Please indicate in **Table D.** any reusable surgical items in the OR utilized a **majority of the time (>75%)**.

Table D. Use of Reusable Items in the OR

Linens	>75%
Back Table Covers	12.a <input type="radio"/> Yes <input type="radio"/> No
Mayo Stand Covers	12.b <input type="radio"/> Yes <input type="radio"/> No
Sterilization wrap	12.c <input type="radio"/> Yes <input type="radio"/> No
Surgical Drapes	12.d <input type="radio"/> Yes <input type="radio"/> No
Surgical Gowns	12.e <input type="radio"/> Yes <input type="radio"/> No
Surgical Towels	12.f <input type="radio"/> Yes <input type="radio"/> No
12.g Other Linens, please describe <div></div>	12.h <input type="radio"/> Yes <input type="radio"/> No
Other Reusable Devices and Equipment	
Anesthesia Circuit	12.i <input type="radio"/> Yes <input type="radio"/> No
Endotracheal Tubes (ETT)	12.j <input type="radio"/> Yes <input type="radio"/> No
Grounding Pads	12.k <input type="radio"/> Yes <input type="radio"/> No
Laryngeal Mask Airways (LMA)	12.l <input type="radio"/> Yes <input type="radio"/> No

Patient Positioning Devices	12.m <input type="radio"/> Yes <input type="radio"/> No
Surgical Basins and Pitchers	12.n <input type="radio"/> Yes <input type="radio"/> No
Trocars	12.o <input type="radio"/> Yes <input type="radio"/> No
12.p Other Reusable Devices, please describe <div style="border: 1px solid black; height: 20px; width: 400px;"></div>	12.q <input type="radio"/> Yes <input type="radio"/> No

If tracked, please indicate **tonnage** of reusable items used:

If tracked, please indicate any **cost savings** from reusable devices:

12.t Provide any additional commentary on reusables in the OR:

13. Does the facility utilize **reusable hard cases** for sterilization of surgical instrumentation and reduction of disposable sterile wrap?

- ☒ Yes
☐ No

Please fill in Table E.

Table E. Savings from Rigid Sterilization Containers in the OR

Total number of surgical kit types	<div style="border: 1px solid black; height: 25px;"></div>
Number of kit types using reusable sterilization containers	<div style="border: 1px solid black; height: 25px;"></div>
Percent of kits utilizing reusable sterilization containers	<div style="border: 1px solid black; height: 25px; text-align: center;">0</div>
Supply savings from avoided purchase of bluewrap	<div style="border: 1px solid black; height: 25px;"></div>
Avoided waste disposal (tonnage)	<div style="border: 1px solid black; height: 25px;"></div>
Avoided waste disposal fees	<div style="border: 1px solid black; height: 25px;"></div>

Other comments or savings

13.g

14. Does the facility utilize **microfiber mops** in the OR as a means to reduce water usage, ergonomic stress, and waste?

- ☐ Yes
☐ No

Energy Management

The **operating room** is a significant user of energy, with high demand from life-saving medical equipment, high air change per hour requirements, lighting, and more. As a result, strategies to reduce energy consumption in the **operating room** can derive considerable cost and energy savings. Please highlight any energy efficiency projects or strategies in the **operating room**.

15. ASHRAE 170 requires a certain number of air changes per hour to ensure patient safety and reduce the risk of surgical site infections in the OR. Some facilities assume that more air exchanges (exceeding code) equals better patient safety despite little clinical evidence to support it. Does the facility meet **but not exceed** air changes per hour per **ASHRAE 170** (20 ACH) as a mechanism to minimize energy consumption in the OR while still ensuring patient safety?

- ☐ Yes
☐ No

16. Has the facility **programmed the HVAC system to reduce air changes per hour** (HVAC setback) when the **ORs** are **unoccupied** to reduce energy consumption?

- ☒ Yes
☐ No

16.a What mechanism does the facility use to control HVAC setback?

- ☐ Occupancy sensors
☐ Mushroom button
☐ Scheduling system
☐ Building Automation System
☒ Other

16.a.a Please describe other mechanisms used for control of HVAC setback:

How many **ORs** have implemented an HVAC setback program?

Operating Rooms (ORs):

From your Facility Profile.

Your facility utilizes HVAC setback in this percent of your **ORs**, based on above information:

0

16.e Has the facility **tracked** associated energy reduction and cost savings from the HVAC setback program?

☒ Yes

☐ No

Please indicate energy and cost savings in Table F.

Table F. HVAC Setback in the OR Savings

Energy Savings (kWh)	
Energy Cost Savings (\$)	
Other Benefits	16.e.c

For more information on HVAC Setback Programs for the **Operating Room**, please see the American Society for Healthcare Engineering **OR HVAC Setback Monograph** available [here](#).

17. Does the facility utilize **LED surgical lighting**?

☒ Yes

☐ No

How many **ORs** are equipped with LED surgical lighting?

Operating Rooms (ORs):

0

From your Facility Profile.

Your facility utilizes LED surgical lighting in this percent of your **ORs**, based on above information:

0

17.d Has the facility tracked **avoided energy use, avoided supply cost, or avoided labor costs** associated with unnecessary bulb changes?

☒ Yes

☐ No

Please fill in Table G.

Table G. LED Surgical Lighting Savings in the OR

Type of Savings	Savings
Energy Savings (kWh)	
Energy Savings (\$)	
Other Considerations	17.d.c <div></div>

18. Does the facility utilize **occupancy sensors for lighting** to reduce energy consumption when the OR is unoccupied and not in use?

- ☒ Yes
☐ No

18.a How many **ORs** are equipped with occupancy sensors?

Anesthesia Use

Although very new to the hospital sustainability spectrum, leading hospitals are re-evaluating the anesthesia care regime for environmental stewardship opportunities that align with patient safety and/or cost reduction. Choice and management of anesthetic gases is important to the facility's overall greenhouse gas (GHG) emissions and climate impact. The volatile anesthetic agents used for patient care in an **operating room** or procedural setting are often vented directly into outside air. Even intravenous anesthetic agents, which don't generate greenhouse gases, have an impact on the environment and must be incinerated rather than contaminate land and water supply. And with severe drug shortages, it is even more critical to be sure the facility is carefully managing their use. Tracking and evaluating the use of the different anesthetic agents that are both clinically effective and environmentally preferable is indicative of culture change within the clinical practice.

19. Please list the **total number of cases requiring anesthesia** per year at the facility (include all adults, pediatrics, OB/GYN, ambulatory, off-floor, other).

20. Does the facility purchase or does in-house pharmacy prepare **pre-filled syringes** (not including boxed bristojets) to minimize waste of unneeded pharmaceuticals?

- ☒ Yes
☐ No

20.a Please select all that apply:

- ☐ Pre-filled Ephedrine
☐ Pre-filled Phenylephrine
☐ Pre-filled Succinylcholine
☐ Pre-filled Propofol

☒ Other

20.a.a Please describe any other **pre-filled anesthetic syringes** being used:

21. Does the facility purchase the **smallest pharmaceutical vials possible** to minimize pharmaceutical wastage?

- ☒ Yes
☐ No

21.a Please describe:

22. Does the facility utilize a supplemental **waste anesthetic gas capture system** to prevent waste anesthetic gases from venting to the outside air?

- ☒ Yes
☐ No

Please Note: A waste anesthetic gas capture system is different than the WAG scavenging system that is used in **ORs** to protect employee health. The WAG capture system prevents WAGs from being emitted into outside air.

22.a Please describe:

23. Has the facility removed **unnecessary** desflurane vaporizers?

- ☐ Yes
☐ No

24. Has the facility removed desflurane from its formulary?

- ☐ Yes
☐ No

Please indicate the **volume of volatile anesthetic agents purchased** in the facility during this award year cycle in Table H below. Please be sure to indicate the size (in mL) of the bottle **purchased** for each agent --the "unit" may vary per facility.

Table H. Volatile Anesthetic Agent Use

Volatile Anesthetic Agent	Size of Bottles (in mL)	Number of Bottles purchased last year
Sevoflurane		

Size #1 =	25. <input type="text"/>	26. <input type="text"/>
Size #2 =	27. <input type="text"/>	28. <input type="text"/>
Size #3 =	29. <input type="text"/>	30. <input type="text"/>
Isoflurane		
Size #1 =	31. <input type="text"/>	32. <input type="text"/>
Size #2 =	33. <input type="text"/>	34. <input type="text"/>
Size #3 =	35. <input type="text"/>	36. <input type="text"/>
Desflurane		
Size #1 =	37. <input type="text"/>	38. <input type="text"/>
Size #2 =	39. <input type="text"/>	40. <input type="text"/>
Size #3 =	41. <input type="text"/>	42. <input type="text"/>

Please indicate the facility's **nitrous oxide usage** during this award cycle year in the Table I below. Nitrous oxide comes in gaseous form, compressed in a cylinder or tank. Institutions typically have two types of nitrous oxide cylinders: 1. Portable tank - in the US, this is a standard size E-cylinder that is attached to the back of every anesthesia machine. 2. Stationary tank - this is a very large cylinder from which the gas gets piped through the walls of the hospital and into the anesthesia machine. This tank can vary in size, so please be clear when indicating the size of the tank as to the weight or volume, and whether that is for a full or empty tank.

Table I. Annual Nitrous Oxide Purchase

Nitrous Oxide Tank	Number of Refills	Weight Empty	Weight Full
E-Cylinder	43. <input type="text"/>	N/A	N/A
44. Stationary cylinder/Pipeline <input type="text"/>	45. <input type="text"/>	46. <input type="text"/>	47. <input type="text"/>
48. Other type of cylinder <input type="text"/>	49. <input type="text"/>	50. <input type="text"/>	51. <input type="text"/>

52. Has the facility calculated the carbon footprint of its **anesthetic gas emissions**?

- ☒ Yes
☐ No

52.a Please describe what **data** the facility used to calculate the **CO2e emissions from anesthetic gases** (e.g. purchasing data, etc.):

The NHS England and England Public Health Sustainable Development Unit also offers assistance calculating the carbon footprint of anesthetic gas usage, available here: [SDU Anesthetic Gas Calculator](#)

The American Society of Anesthesiologists provides guidance on Greening the OR for anesthesiologists in [Greening the Operating Room: Reduce, Reuse, Recycle and Redesign](#).

53. Has the facility provided or held **anesthesia staff education** on environmental impacts of inhaled anesthetics and reduction strategies for clinicians?

- ☐ Yes
☐ No

54. Please share any additional comments or clarification around anesthesia data or sustainability strategies:

Greening the OR Savings

Greening the OR Total Savings

Avoided Waste (tonnage)	Cost Savings (\$)	Energy Saved (kWh)
55.	56.	57.
0	0	0

Greening the OR Successes

Please describe any other innovative Greening the OR programs or successes at the facility this past year (not mentioned above) that you would like to share in the spaces below. Please feel free to provide commentary and/or attach a file.

58. Success 1: Please describe

59. Please attach any additional documentation (optional):

60. Success 2: Please describe

61. Please attach any additional documentation (optional):

62. Success 3: Please describe

63. Please attach any additional documentation (optional):
