

PRACTICE GREENHEALTH

2010 Sustainability Benchmark Report

A Practice Greenhealth Member Benefit



PRACTICE
Greenhealth™

© Practice Greenhealth 2010

May not be reproduced in whole or in part without the express
written permission of Practice Greenhealth

Table of Contents

EXECUTIVE SUMMARY	1
1.0 INTRODUCTION.....	3
2.0 THE DATA SET	4
I. NORMALIZATION OF DATA.....	4
What numbers are hospitals using?.....	5
3.0 RESULTS.....	6
I. WASTE PROFILING	6
Table 1: Miscellaneous Data Set Information	6
Waste and Recycling Data	6
Table 2: Waste Generation by Type of Waste Stream	7
Figure A: Waste Generation - Visual Comparison	7
Normalized waste data.....	7
Why it's important to pick a good normalization factor.....	7
Table 3: Total Waste Generation Normalized by Different Factors	8
Waste generation normalized by Adjusted Patient Day	8
Table 4: Waste Generation Normalized by Adjusted Patient Day	8
II. COSTS AND VOLUMES OF HEALTHCARE WASTE STREAMS	9
Table 5: Costs and Volume of Waste Streams for All PFC and ELC Applicants ¹	9
Table 6: Waste Costs by Region for All PFC and ELC applicants ¹	9
Construction & Demolition Debris.....	10
Table 7: Construction & Demolition Debris	10
III. SUSTAINABILITY AND ENVIRONMENTAL INFRASTRUCTURE	11
Table 8: Sustainability Infrastructure	11
Who's Who in Healthcare Sustainability?	12
Table 9: Departmental Representation on Green Teams	12
Toxins	13
Mercury	13
DEHP & PVC.....	13
Table 10: DEHP & PVC Reduction	13
Nicotine.....	13
Table 11: Nicotine	13
IV. SOLID WASTE: REDUCE, REUSE, RECYCLE	14
Table 12: Donations.....	14

V. REGULATED MEDICAL WASTE REDUCTION (RMW)	15
Table 13: RMW Reduction Techniques	15
Single Use Device Reprocessing and Reusable Sharps Container Programs	15
Table 14: Single-Use Device Reprocessing	16
Table 15: Reusable Sharps Container Program Savings	16
VI. CHEMICAL USE AND WASTE MANAGEMENT PROGRAMS	17
Pharmaceutical Waste Management	17
Table 16: Pharmaceutical Waste Management Program	17
Ethylene Oxide (EtO) and Glutaraldehyde Reduction and Elimination	18
Table 17: Ethylene Oxide (EtO)	18
Table 18: Glutaraldehyde	18
Green Cleaning	19
Table 19: Green Cleaning	19
Integrated Pest Management (IPM)	21
Table 20: Integrated Pest Management	21
Solvent Distillation	22
Table 21: Solvent Distillation	22
Figure B: Solvent Distillation - Visual Comparison	22
Table 22: Savings from Recycling Solvents	22
VII. ENVIRONMENTALLY PREFERABLE PURCHASING (EPP)	23
PRODUCTS AND PRACTICES	23
Table 23: EPP Purchasing Practices	23
Table 24: EPP Purchasing Practices and Policies	23
Table 25: EPP Purchasing Practices and Policies Expanded	24
Electronics	25
Table 26: EPEAT and Waste Electronics	25
Reusable Linens	26
Table 27: Reusable Linens	26
Other Reusable Products	27
Table 28: Reusable Products	27
VIII. FOOD	28
Table 29: HCWH Food Pledges	28
Table 30: Reusable Food Service and Cafeteria Items	28
Table 31a: Paper and Biodegradable Products Use by 2010 PFC Winners	29
Table 31b: Paper and Biodegradable Products Use by 2010 ELC winners	29
Styrofoam Elimination	30
Table 32a: Styrofoam Products Use by 2010 PFC Winners	30
Table 32b: Styrofoam Products Use by 2010 ELC Winners	30
Local and Organic Food Purchasing	31
Table 33: Local and Organic Food	31
Figure C: Local and Organic Food Purchasing - Visual Comparison	31
Table 34: Bottled Water	32
Healthier Food Choices	32
Table 35: Healthier Food Choices	32
Table 36: Other Food Projects	33

IX. FACILITIES AND CONSTRUCTION	34
Energy Efficiency and Water Conservation	34
Energy.....	34
Water.....	34
Table 37: Energy Efficiency and Water Conservation.....	35
Table 38: Energy Efficiency Projects.....	36
Table 39: Refrigerant Management.....	36
Table 40: Commissioning	37
Table 41: Potable Water Use Reduction: Table 1.....	37
Table 42: Potable Water Use Reduction: Cooling Towers: Table 2.....	38
X. TRANSPORTATION	39
Table 43: Alternative Transportation	39
XI. A CULTURE OF SUSTAINABILITY: OTHER INNOVATIVE ENVIRONMENTAL INITIATIVES.....	40
XII. APPENDICES	41
Appendix A: Recycled Materials	41
Table 44: Recycled Materials Sorted by Occurrence (highest to lowest)	41
Table 45: Recycled Materials Sorted Alphabetically.....	43
Appendix B: Single Use Device (SUD) Reprocessing.....	45
Table 46: SUD Reprocessing	45
4.0 CONCLUSIONS	48
Table 47: Summary of Savings for 2010 Award Winners.....	48
* SOURCES:	49

Executive Summary

Practice Greenhealth has been recognizing environmental excellence in health care sustainability since the Awards program inception in 2002. This is the second annual benchmark report, based on data supplied in applications by 2010 Partner for Change (PFC) and Environmental Leadership Circle (ELC) award winners. The data mirrors the order of the 2010 applications so it can be used to compare a facility to national averages and top performers.

Applications for the 2010 Environmental Excellence Awards increased by more than 50% since 2009. The resulting significantly larger data pool enabled the release of this report and data comparison for two years.

Data is combined for PFC and PFC with Distinction winners, and is shown separately for ELC winners. Thus the report provides overall performance comparisons between winners in the two award categories – those engaged in health care sustainability and top performers.

The 2010 PFC data set is quite broad in scope, and represents both PFC Award winners (facilities that range from just meeting the minimum criteria <http://practicegreenhealth.org/awards/pfc> to having a well established environmental program) and PFC with Distinction Award winners (facilities that are at the high end of the PFC Award, but are not quite in the ELC category.)

The report analyzes data provided by the 114 PFC and 24 ELC 2010 Award winners, which include health care facilities of all types and sizes located across the country. Included in the 114 PFC winners are 15 long term care facilities. These facilities are generally excluded only where “adjusted patient day” (APD) is used to normalize data, since long term care facilities do not use APD and generate quite a different waste/material type than acute care facilities. The 2010 data set is over twice the size of the 60 winners in the 2009 data set. The 2009 report did not include the top winners (ELC), an addition for this year’s report.

In addition to reporting out on metrics, the report shares sustainability trends and emerging areas of focus. Hospitals and health systems are increasing recycling and diversion rates, greener cleaners use, toxicity reduction, healthier food options, and making progress in almost every area of the report. Some activities are in place virtually across the board, such as the creation of green teams to manage program implementation, energy efficient lighting upgrades, and pharmaceutical waste management. Other emerging growth areas include local food sourcing, Styrofoam elimination, water bottle elimination, and solvent distillation in laboratories.

Among the PFC Award winners:

- The average rate of recycling is 24%;
- 90% have clinicians (nurses & physicians) involved in environmental programs;
- 78% have engaged in an Regulated Medical Waste (RMW) education and reduction programs;
- 74% are reprocessing single use devices
- 58% have implemented a reusable sharps container program;
- 79% have implemented a pharmaceutical waste management program;
- 70% have an environmentally preferable purchasing policy (EPP);

- 89% have communicated a desire for EPP products with their Group Purchasing Organization;
- 12% are using reusable drapes *less* than half of the time;
- 21% are using reusable drapes *more* than half of the time;
- 47% have signed the Health Care without Harm Healthy Food Pledge;
- 57% are Energy Star Partners;
- 82% engaged in energy efficiency projects;
- The entire group saved a cumulative total of 47.3 million kWh and \$4.9 million from energy efficiency projects;
- 69% engaged in water conservation projects;
- The entire group saved a cumulative total of 234 million gallons water resulting from those projects.

Among the Environmental Leadership Circle Award (top performers) winners:

- The average recycling rate is 36%;
- 96% have clinicians involved in environmental programs;
- 100% have engaged in an Regulated Medical Waste (RMW) education and reduction program;
- 92% are reprocessing single use devices;
- 75% have implemented a reusable sharps container program;
- 96% have implemented a pharmaceutical waste management program;
- 71% have an Environmentally Preferable Purchasing Policy;
- 92% have communicated a desire for EPP products with their GPO;
- 29% are using reusable drapes *less* than half of the time;
- 13% of ELC winners are using reusable drapes *more* than half of the time;
- 54% have signed the Health Care Without Harm Healthy Food Pledge;
- 75% are EnergyStar Partners;
- 88% engaged in energy efficiency projects;
- The group saved a cumulative total of 39.1 million kWh and \$3.4 million from energy efficiency projects;
- 79% engaged in water conservation projects;
- The group saved a cumulative total of 137.6 million gallons of water resulting from those projects.

Recycling helped PFC and ELC Award winners divert over 1.4 million tons of waste from solid and hazardous waste streams. The top five most highly recycled materials in 2010 were batteries, fluorescent lamps, mixed paper, computers and electronics. In 2009 the list looked the same, except that toner cartridges replaced mixed paper. These lists highlight the efforts hospitals are making to segregate their Universal Wastes in order to reduce their hazardous waste streams and associated costs.

Practice Greenhealth member hospitals are achieving dramatic reductions in their environmental footprint and are committed to implementing sustainable, eco-friendly practices. The overall intent of the report is to assist hospitals measuring their performance and to define steps in their efforts toward sustainability in healthcare.

1.0 Introduction

While the health care sector has a large environmental footprint, it is also saving millions of dollars each year through waste reduction and prevention, energy and water efficiency, and sustainable solutions to old and emerging issues.

Practice Greenhealth's second Sustainability Benchmark Report provides benchmark data, presents trends identified in the data, and highlights possible opportunities around sustainability in health care through activities reported by winners of the **Partner for Change (PFC)** and **Environmental Leadership Circle (ELC)** Awards in the Practice Greenhealth 2010 Environmental Excellence Awards Program. Designed to recognize improvement efforts, participation in this program increases each year, with a 50% increase in applications from the 2009 to the 2010 Awards season.

Since the Environmental Excellence Awards program inception in 2002, the sustainability movement in health care has increased significantly. The health care sector has moved beyond mercury elimination and solid waste reduction, recognizing that sustainability can reach all materials and departments within a health care facility.

Because our first Metrics Benchmark Report in 2009 was so well received, we expanded the 2010 PFC/ELC Award application form in order to gather even more data and information to increase metrics and sustainability trend reporting. The PFC/ELC Award application requires extensive reporting on waste data, waste and purchasing policies, and specific program progress, as well as other criteria.

The report compares the 2010 data to the 2009 data, where possible, but because the application was greatly expanded in 2010, there is sometimes no 2009 data available. The 2010 data pool was also much larger, due to a 50% increase in applications between 2009 and 2010.

This report is designed to reflect the 2010 PFC/ELC Award application form, so past applicants can easily compare their answers to the aggregate or average numbers presented for the sector. This report presents a snapshot of greening activities that American and Canadian healthcare facilities are implementing today, from simple waste reduction, to cutting edge sustainability projects.

Sincerely,

Lin Hill
Awards Program Manager

Janet Brown
Director of Sustainable Operations and Green Building

Additional input and guidance provided by Practice Greenhealth members
Sister Mary Ellen Leciejewski, Ecology Program Coordinator, Catholic Healthcare West,
and Michael Geller, Director of Sustainability, Providence Health & Services, Oregon.

2.0 The Data Set

The following analyses have been done using data provided by the 114 PFC and 24 ELC 2010 Award winners, which includes health care facilities of all types and sizes located across the country. Included in the 114 PFC winners are 15 long term care facilities. These facilities are generally excluded only where “adjusted patient day” (APD) is used to normalize data, or where we are comparing RMW data between hospitals, since long term care facilities do not use APD and generate a very different waste stream profile than acute care facilities. The 2010 data set is over twice the size of the 2009 data set, which consisted of 60 PFC Award winners. Last year’s report did not include the top winners (ELC), an addition for this year’s report.

The 2010 PFC data set is quite broad in scope, and recognizes both PFC Award winners (facilities that range from just meeting the minimum criteria www.practicegreenhealth.org/awards to having a well established environmental program) and PFC with Distinction Award winners, which include facilities that are at the high end of the PFC Award, but are not quite in the ELC. The ELC winners are the hospitals that are leading the nation in healthcare sustainability. We have combined the PFC and PFC with Distinction winners, but have separated out the ELC winners in the tables below, for comparison. So when viewing the data, you can view the benchmark for engaged facilities (the PFCs) and then see the benchmark for top performing hospitals.

Please note that all of the data contained in this report is taken directly from the 2009 and 2010 Award applications, and have been compiled and analyzed by staff. Practice Greenhealth cannot guarantee the accuracy of the data. The data is provided through the applications, and while some of it is documented, there is no certification of the accuracy of the data. As it is reviewed, unintentional errors are sometimes uncovered, and skewed numbers are noticed and in some cases, pulled out of the data pool. Errors can also occur in data manipulation. However, overall, Practice Greenhealth feels the data presented in this report is adequately sound and represents the best sampling of actual sustainability benchmarks, specific activities, trends and identification of growth opportunities in the sector today.

I. NORMALIZATION OF DATA

Data must be “normalized” in order to compare metrics among facilities or even for measuring one’s own progress. No two hospitals are exactly alike and will vary in many ways, including: terms of services provided, number of beds and outpatient activity, whether they are a teaching institution or have research labs, which state regulations they are operating under, the culture within the organization, the number of babies delivered, the number of surgical suites, and numerous other factors. In addition, each hospital will vary in how busy they are from year to year. Thus, we need to be able to normalize the data to make accurate comparisons.

For example, if a hospital has reduced one of its waste streams, it needs to be able to determine if the decrease was due to completion of a large project, implementation of a new waste minimization program, or if the hospital was just a lot less busy than the year prior. But how does a facility best measure how busy they are? The answer is normalization factors and the best of these factors takes into account both inpatient and outpatient activity. In addition, a facility needs to note special activities, since Earth Day Clean-ups, renovations, or Joint Commission preparation can all lead to a spike in waste generation.

What numbers are hospitals using?

- **BEDS OR PATIENT DAYS:** Many hospitals use daily beds or patient days to track internal activity. Often nursing and accounting staff use these types of numbers frequently. These types of normalization factors change daily. While “staffed beds” is a more accurate normalization factor than “licensed beds,” by definition it changes daily, which makes it harder to obtain and use; licensed beds remain constant, which increases ease of use, but often exceeds more “real” staffed bed numbers. We do use staffed beds for ease of your comparison in this report, but remember to note that it does not take into account outpatient activity.
- **OUTPATIENT VISITS:** For facilities that have a lot of clinics, outpatient visits may be a useful number to use. Clinics and university hospitals generally have a higher proportion of outpatient visits than a typical hospital. However, since there is no accounting for inpatient activity in these numbers, using outpatient visits alone to normalize hospital waste data does not provide very useful information. We will not be using these numbers for normalization in this report.
- **SQUARE FOOTAGE:** In the past we have not asked for square footage, but we will be requesting this data for the purpose of energy comparisons in the 2011 PFC/ELC Award application and subsequent sustainability report.
- **ADJUSTED PATIENT DAYS:** Some variation of adjusted patient days (which takes into account inpatient and outpatient activity) is probably the best of the normalization factors. Many hospitals already use adjusted patient days (APD), which are generally calculated as:

APD = (Total Patient Days)*(Total Patient Revenue/Inpatient Revenue)
where total patient revenue = inpatient + outpatient revenue.

After much discussion with hospitals, regulatory agencies, and consultants, the best overall normalization factor appears to be **adjusted patient days**, since this number accounts for *both inpatient and outpatient activity*. This report will primarily use APD for normalization, but will also use staffed beds where appropriate.

In most tables we present data normalized to both staffed beds and APD. Where data is reported in terms of APD, it should be noted that the data represents only those hospitals that reported this metric.

This report also uses percentage of the data set to report data; for example percentage of waste types or percentage of applicants participating in specific greening activities. This helps us trend sustainability activities in the sector.

3.0 RESULTS

I. WASTE PROFILING

To further flesh out Practice Greenhealth's data set, Table 1 presents some interesting characteristics of the 2010 data set. Almost half of the PFC applicants had won the PFC Award previously. Ninety percent (90%) of the PFC winners and 96% of the ELC winning facilities are not-for-profit. Also of note is that 81% of PFC facilities do community benefit reporting, but only half of those include sustainability in their report. 92% of ELC facilities do community benefit reporting, but 79% of them include sustainability activities in their report.

Table 1: Miscellaneous Data Set Information

2010 Data Set	2010 PFC winners	2010 ELC winners
PFC winners who have won PFC previously	46%	—
Facilities that are non-profit	90%	96%
Facilities that prepare a community benefit report	81%	92%
Facilities that include sustainability activities in their community benefit report	50%	79%

Waste and Recycling Data

Table 2 and Figure A illustrate waste generation by percentage of *total* waste stream (or what percent of a hospital's waste is solid waste, recycling, Regulated Medical Waste (RMW) or hazardous waste?). Because each waste stream is presented as an average percentage of a facility's total waste stream, no normalization factors are necessary. The range of data is also presented, by a low and a high value (this format is used in a number of the tables below). The report also shows total waste generated to capture waste prevention activities and not just account for diversion through recycling.

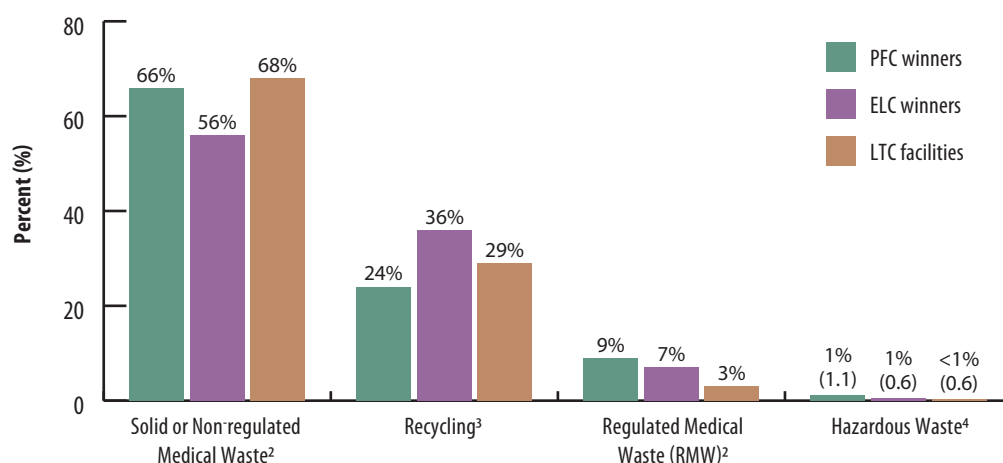
For example, reading across the first row, for the 2009 metric, on average, non-regulated medical waste (also called solid waste, municipal waste, clear bag waste) was 68% of *total* waste stream generation. For the 2010 PFC winners, this solid waste stream made up 66% of total waste stream generation, an exciting reduction. The low to high range of this waste stream was 28-85%. The 2010 ELC winners' solid waste was an average of 56% with a range from 36-69%. 2010 Long Term Care facilities reported an average of 68% of their total waste as solid (or non-regulated) waste, with a range of 38-91%. This is more clearly understood in the table below:

Table 2: Waste Generation by Type of Waste Stream

Waste Type	Average of Total Waste Stream		Range for 2010 PFC winners	Average of Total Waste Stream	Range for 2010 ELC winners	Average of Total Waste Stream	Range for 2010 LTC ¹ facilities
	2009 PFC winners	2010 PFC winners		2010 ELC winners		2010 LTC facilities	
Solid or Non-regulated Medical Waste ²	68%	66%	28-85%	56%	36-69%	68%	38-91%
Recycling ³	24%	24%	11-68%	36%	25-55%	29%	7-61%
Regulated Medical Waste (RMW) ²	8%	9%	2-25%	7%	1-12%	3%	0-10%
Hazardous Waste ⁴	<1% (0.46)	1% (1.1)	.001-6%	1% (0.6)	.01-2%	<1% (0.4)	0-1.75%

- 1) Waste percentages for Long Term Care facilities were calculated based on fifteen 2010 PFC Award winners.
- 2) Some of the solid waste numbers may contain treated RMW (e.g. when treated onsite by autoclave before being land filled), which drives the solid waste percentages up and the RMW percentages down.
- 3) The recycling numbers may include prevented or avoided waste.
- 4) The hazardous waste percentages were generally reported as less than 1 percent, but this number should not be zero for any hospital.

Figure A: Waste Generation - Visual Comparison



Normalized waste data

Why it's important to pick a good normalization factor

As discussed in the section above on data normalization, the most useful waste normalization factor appears to be adjusted patient days (APD) because it takes into account both inpatient and outpatient activity. To illustrate the importance of which normalization factor is used, Table 3 compares using APD, licensed beds and staffed beds as normalization factors.

A number of the Partner for Change facilities indicated that they are running far below their licensed bed numbers. On *average*, 2010 PFC winners reported **staffing 86% of their licensed beds**, but the range was huge, from **23 to 100%**, and ELC winners reported **staffing 82% of their licensed beds**, on average, with a range of **53% to 100%**.

Total waste is the *sum* of waste reported as Solid waste, Recycling (including reduced, reused or recycled waste), Regulated Medical Waste, and Hazardous waste (including universal waste); through tracking total waste, a facility can identify waste prevention activities. Universal Wastes are wastes that meet the definition of hazardous waste, but through proper accumulation and transport, pose a relatively low risk compared to other hazardous wastes. These wastes can be separated from the hazardous waste stream if properly handled and recycled.

Table 3: Total Waste Generation Normalized by Different Factors

Normalization factor	2009 PFC winners	2010 PFC winners	Data range, 2010 PFC winners	2010 ELC winners	Data range, 2010 ELC winners	2010 LTC winners	Data range, 2010 LTC winners
Average lbs. Total Waste / Adjusted Patient Day (APD) ¹	24.0	24.0	11.6-50.3	23.5	11.4-42.0	n/a ²	n/a ²
Average lbs Total Waste / Licensed bed/day	25.9	28.1	9.1-70.4	24.8	11.0-52.3	18.8	10.7-29.2
Average lbs.Total Waste / Staffed bed/day	30.4	33.8	13.9-102.5	29.1	15.8-54.1	28.8	14.2-51.6

1) Adjusted Patient Days = Total Patient Days x (Total Patient Revenue/Inpatient Revenue)
Where Total Patient Revenue = Inpatient Revenue + Outpatient Revenue

2) LTC facilities don't generally use APD since there are no outpatients.

Waste generation normalized by Adjusted Patient Day

TREND: Table 4 illustrates that in 2009, PFC winners generated 16.0 # of solid waste per APD; in 2010, this generation rose slightly to 16.9 pounds per APD for PFC winners, but dropped to 13.3 pounds per APD for ELC winners.

The trend in waste generation is fairly flat from 2009 to 2010 for PFC winners; the 2010 ELC winners generated less waste and recycled at approximately a 30% higher rate.

Table 4: Waste Generation Normalized by Adjusted Patient Day

Waste Type	Average lbs. per APD ¹ for 2009 PFC winners	Data range for 2009 PFC winners	Average lbs. per APD ¹ for 2010 PFC winners	Data range for 2010 PFC winners	Average lbs. per APD ¹ for 2010 ELC winners	Data range for 2010 ELC winners
Solid Waste	16.0	4-39	16.9	1.9-52.5	13.3	6.8-26.3
Recycling	5.6	1-16	5.7	1.6-18.2	8.6	1.3-17.5
RMW	1.9	0.3-6	1.9	0.3-8.1	1.6	0.5-3.4
Hazardous Waste	0.14	0.01-1.95	0.14	0.01-1.06	0.13	0.01-0.30

1) Adjusted Patient Days = Total Patient Days x (Total Patient Revenue/Inpatient Revenue)
Where Total Patient Revenue = Inpatient Revenue + Outpatient Revenue

II. COSTS AND VOLUMES OF HEALTHCARE WASTE STREAMS

Table 5 presents average costs of waste disposal across the country. These waste streams are broken down by region in Table 6. Please note in Table 5 that some geographical regions were underrepresented (we did not receive many applications from that geographical area, or they were downgraded to Partner Recognition).

Table 5: Costs and Volume of Waste Streams for All PFC and ELC Applicants¹

Waste Stream	Solid Waste Cost per <u>Ton</u>	Recycled Cost per <u>Ton</u>	RMW Cost per <u>Ton</u>	Hazardous Waste Cost per <u>Pound</u>
Average	\$121	\$68	\$963	\$4.02
Maximum	\$404	\$445	\$3243	\$45.58
Minimum	\$31	-\$1133 (revenue)	\$141	\$0.15
Number of Respondents ²	87	70	81	73

1) Please note that this is a slightly different data set and includes all applicants as opposed to winners.

2) The number of respondents varies a little with each question, depending on which applicants answered which questions.

Table 6: Waste Costs by Region for All PFC and ELC applicants¹

Average Costs by Region	California	Northeast	Midwest	Southeast	Southwest	MidAtlantic	Northwest
Solid Waste Per Ton	\$158	\$122	\$90	\$53	109	\$136	\$150
Recycled Per Ton	\$51	\$41	\$88	\$82	-\$29 (revenue)	\$83	\$25
RMW Per Ton	\$1,111	\$1,765	\$821	\$552	\$461	\$729	\$1,618
Hazardous Waste Per Pound	\$4.99	\$4.66	\$1.91	\$0.27	\$1.76 ¹	\$3.32	\$6.61
Number of Respondents ²	12	13	21	2	3	11	11

1) Please note that this is a slightly different data set and includes all applicants as opposed to winners.

2) Also note that some of the data sets are quite small.

Construction & Demolition Debris

Table 7 presents construction and demolition debris (CDD) information. This data is completely separate from the total waste information provided in the above tables because it would greatly skew the solid waste data. Recycling of CDD is important, because it keeps the largest volume of waste out of landfills. This year, our winners diverted nearly 14,000 tons of waste from solid waste landfills. It is also possible that some additional solid waste was recycled by the contractors.

Table 7: Construction & Demolition Debris

Construction & Demolition Debris	2010 PFC winners Tons	2010 ELC winners Tons
Total Tons Construction & Demolition Debris	26,435	8,612
Total Tons Disposed as Solid Waste	17,647	3,510
Total Tons Recycled (segregated onsite)	2,682	1,869
Total Tons Recycled (segregated offsite)	6,102	3,233
Total % of all C&DD recycled	33%	59%

III. SUSTAINABILITY AND ENVIRONMENTAL INFRASTRUCTURE

An increasing number of hospitals are formalizing their commitment to sustainability with firm buy-in from leadership and creation (or further securing) of top down commitment with the accompanying reporting structure, strategy and management tools. Increasingly, leadership is providing resources to help incorporate sustainability into standard operating procedures. While in the past, “greening” a facility was considered the responsibility of the Environmental Services team, today it is recognized that sustainability permeates every area and activity in the hospital, from purchasing, to nursing (clinical), to facilities, to food services, to the OR, strategic planning, safety, quality and community benefit.

It comes as no surprise, then, that the data from 2009 and 2010 strongly suggest that in order to have a successful environmental program, a facility must have an active Green Team with broad representation from many different departments within the facility. Ninety-six percent (96%) of the PFC and ELC Award winning facilities reported having broad based Green Teams, suggesting that one person simply cannot green an entire facility on their own, especially when the sustainability activities are added to an existing job function. Generally, getting buy-in from the hospital administration and participation of all staffers results in a firm environmental improvement strategy.

TREND: The emerging role of the sustainability lead in health care and leadership buy-in is demonstrated in the table below. The data suggests that there is a trend toward taking sustainability off the plate of an existing employee and identifying a sustainability lead for the hospital. For instance, in 2009, 33% of PFC winners reported having a sustainability officer but by 2010, 54% of PFCs and fully 75% of ELCs reported having a designated sustainability officer. That’s a steep increase in only one year.

Table 8: Sustainability Infrastructure

2009 PFC winners	2010 PFC winners	2010 ELC winners	Reported that they:
78%	81%	92%	Have an environmental commitment statement
72% ¹	69%	71%	Have a written plan for environmental management of the facility
97%	96%	96%	Have a “Green Team”!
33%	54%	75%	Have a designated sustainability officer
45%	38%	38%	Have someone on staff who is responsible for sustainability within their job description (but not by title)
52%	52%	46%	Track their environmental improvement initiatives in the Joint Commission structure
82% ²	78%	75%	Provide new employee orientation on environmental initiatives
82% ²	60%	83%	Provide annual training on environmental initiatives
95%	90%	96%	Are clinicians involved in your environmental programs?
78%	86%	96%	Nurses?
—	87%	92%	Physicians?

1) 2009 question was: Have an environmental management plan or policy that guides your program?

2) 2009 question was: Provide staff training on environmental sustainability?

Who's Who in Healthcare Sustainability?

As pointed out above, it takes representatives from many departments throughout the facility to create a successful green team. Table 9 below indicates which departments were represented on hospital green teams.

TREND: Hospitals are actively using interdepartmental green teams to further their sustainability programs.

OPPORTUNITY: Facilities that have had Green Teams for a number of years might consider revitalizing their team and attempt to reengage their clinical staff.

Table 9: Departmental Representation on Green Teams

Department	2010 PFC winners	2010 ELC winners
Environmental Services	96%	96%
Facilities	87%	92%
Environmental Health and Safety (EH & S)	39%	50%
Materials Management	88%	88%
Engineering	80%	63%
Safety	78%	71%
Administration	86%	67%
Nutrition	72%	50%
Nursing	90%	83%
Infection control	46%	46%
Physicians	34%	33%
Communications/Marketing	65%	58%
Food Services	87%	79%
Risk Management	26%	25%
Other	53%	54%

Toxins

Mercury

The healthcare industry has come a long way since the 1998 Memorandum of Understanding between the US EPA and the American Hospital Association which focused primarily on getting mercury out of healthcare, and reducing overall waste volumes.

In 2009, 78% of the PFC winners had already won Practice Greenhealth's Making Medicine Mercury Free (MMMMF) Award or won it in 2009. In 2010 62% had already won the MMMF or did win it in 2010; the percentage went down because the Award application pool was greatly increased with first time PFC applicants. (All of the 2010 ELC winners had already won MMMF, as it is one of the minimum requirements of being inducted into the Leadership Circle.)

DEHP & PVC

Table 10 illustrates the progress that Award winners are making towards reducing DEHP and PVC in their facilities.

TREND: DEHP and PFC- free programs are becoming more standard at healthcare facilities.

Table 10: DEHP & PVC Reduction

DEHP & PVC Reduction	2010 PFC winners	2010 ELC winners
Have a general DEHP reduction program	45%	54%
Has a program to reduce DEHP-containing products in the NICU	50%	58%
Has a PVC reduction program	46%	75%
PVC program includes products and supplies	43%	71%
PVC program includes construction and renovation materials	36%	54%

Nicotine

We are pleased to report that 89% of PFC and 100% of ELC winners have entirely smoke free facilities.

Table 11: Nicotine

Nicotine	2010 PFC winners	2010 ELC winners
Is your entire facility smoke free?	89%	100%
If more than one main building, is your entire campus smoke free?	76%	92%
We allow smoking in the following areas:		
Smoking Lounge	6%	4%
Chemical Dependency Unit	2%	4%
Psychiatric Unit	2%	4%
Outdoors or off property	48%	25%

IV. SOLID WASTE: REDUCE, REUSE, RECYCLE

Table 12 summarizes donations healthcare facilities made to third world countries and other needy hospitals through non-profit organizations. This benefits the recipients and keeps waste out of our solid waste landfills.

Table 12: Donations

Donated item	2010 PFC winners	2010 ELC winners
Clinical Items	62%	88%
Medical Equipment	68%	88%
Furniture	59%	83%
Computers	42%	58%
Linens	25%	46%
Books	20%	33%
Other Supplies	32%	38%

V. REGULATED MEDICAL WASTE REDUCTION (RMW)

Table 13 illustrates the use of specific RMW reduction techniques, while Tables 14 and 15 present data on savings and waste avoidance due to Single Use Device Reprocessing and Reusable Sharps Container Programs.

TREND: Red Bag Reduction continues to be an area of focus for sustainability efforts and hospitals are reaping savings from these efforts. Top performing hospitals have strength in this area.

Table 13: RMW Reduction Techniques

These facilities reported that they:	2009 PFC winners	2010 PFC winners	2010 ELC winners
Have engaged in an RMW education and reduction program	82%	78%	100%
Have posted waste segregation posters at red bag collection areas	—	73%	92%
Use a Fluid Management system in the OR	47%	50%	79%
Use the fluid management system exclusively in orthopedic ORs	—	11%	38%
Use Single Use Device reprocessing	68%	74%	92%
Have implemented a Reusable Sharps container program	57%	58%	75%

Single Use Device Reprocessing and Reusable Sharps Container Programs

The data for this section was taken from narratives provided by our PFC and ELC Award winners. Practice Greenhealth encourages use of these and other RMW reduction techniques. Many facilities have saved money and diverted waste from landfills, but each facility must evaluate their own potential savings with their particular vendor. You may see different results at your facility from what is reported below. Other benefits from reusable sharps container programs may include reduced incidents of overfilled containers and associated worker exposure risk, reduced staff time and fewer staff handling sharps containers.

In addition, the regular normalization factors do not work particularly well for Single Use Device Reprocessing (SUDs), as the normalization factor really should be the number of procedures in the OR. For instance, the average savings per staffed bed for SUDs is reported below as approximately \$500 per bed for PFC winners, but the data ranged from \$5.00 to \$1,800 per bed. The large range may be because SUD savings depends on a number of additional factors, including how established the program is in the facility, how many of the procedures were inpatient vs. outpatient, etc. so this is not really the right normalization factor. The range for savings per APD also ranged widely, but average numbers can be a good reference point.

The reusable sharps normalization is a bit better, because reusable sharps containers are used hospital-wide, but the savings per staffed bed still ranged from \$10 to \$1000 per bed. The wide range could be attributed to timing; if a program was implemented many years ago, the savings may not have been attributed in this Award application.

Table 14: Single-Use Device Reprocessing

SUD Reprocessing	2010 PFC winners	2010 ELC winners	# of PFC and ELC respondents
Total Annual Savings (sum of facilities)	\$6,409,500	\$4,426,700	46; 18
Average Annual savings per staffed bed (approx.)	\$500/bed	\$750/bed	43; 14
Average Annual savings per APD	\$1.40	\$ 3.51	34; 16
Tons of waste diverted from landfill (sum all facilities)	38 Tons	41 Tons	21; 12
Average Annual lbs. of waste diverted from landfill per staffed bed	16# per bed	21# per bed	21; 12
Average Annual lbs. waste diverted per APD	0.040	0.046	13; 11

Table 15: Reusable Sharps Container Program Savings

Reusable Sharps Containers	2010 PFC winners	2010 ELC winners	# of PFC and ELC respondents
Total Annual Savings (sum of facilities)	\$1,351,450	\$503,950	27; 8
Average Approx. annual Savings per staffed bed	\$140	\$92	29; 7
Average Annual savings per APD	\$ 0.41	\$ 0.35	25; 7
Tons of waste diverted from landfill (sum all facilities)	640 Tons	70 Tons	28; 7
Average Annual lbs. waste diverted from landfill per staffed bed	145# per bed	88# per bed	28; 7
Average Annual lbs. waster diverted per APD	0.46	0.28	22; 6

VI. CHEMICAL USE AND WASTE MANAGEMENT PROGRAMS

Pharmaceutical Waste Management

In recent years, hospitals have intensified their efforts towards understanding and properly disposing of waste pharmaceuticals, both hazardous pharmaceutical waste and non-hazardous pharmaceutical waste. In 2009, 65% of PFC winners had implemented pharmaceutical waste management programs, and by 2010, 79% of PFC winners and fully 96% of ELC winners had implemented this type of program. That is an 18% increase in one year for PFCs! Clearly the message to deal with this complex problem is being heard by healthcare facilities across the country.

TREND: Pharmaceutical waste management has recently moved to the top of healthcare's "to do" list, and many hospitals are implementing programs to properly handle this complex waste stream.

Table 16: Pharmaceutical Waste Management Program

Process	2009 PFC winners % Yes	2010 PFC winners % Yes	2010 ELC winners % Yes
Have implemented a pharmaceutical waste management program	65%	79%	96%
...of these, hired an outside vendor to help set up your program	77%	67%	65%
separate pharmaceutical waste at the point of generation	—	66%	67%
send pharmaceutical waste back to pharmacy for proper segregation	—	29%	42%
collect all pharmaceutical waste at the waste collection point and sort in a satellite accumulation area	—	29%	21%
treat all pharmaceuticals as hazardous waste	—	30%	38%
Other	—	23%	25%

Ethylene Oxide (EtO) and Glutaraldehyde Reduction and Elimination

Tables 17 and 18 show how much progress Award winning hospitals have made towards eliminating EtO and Glutaraldehyde.

TREND: Hospitals are moving away from Ethylene Oxide where possible and seeking alternative methods for sterilization and high level disinfection of instruments. Please note that the totals for the list of alternatives in these two tables will be more than 100% because hospitals often use more than one type of sterilization or high level disinfection technique.

Table 17: Ethylene Oxide (EtO)

EtO	% 2009 PFC winners	% 2010 PFC winners	% 2010 ELC winners
Reduced the use of EtO	72 ¹	74%	88%
completely eliminated EtO	—	47%	54%
Alternative		% using	% using
Steam sterilization	—	63%	79%
Hydrogen peroxide/ plasma	—	33%	38%
Autoclave	—	46%	54%
Low temperature hydrogen peroxide gas plasma (Sterrad)	—	49%	71%
Other	—	11%	8%

1) In 2009 the question combined reduction or elimination EtO, so this number is artificially high.

Table 18: Glutaraldehyde

Glutaraldehyde	% 2009 PFC winners	% 2010 PFC winners	% 2010 ELC winners
Reduced Glutaraldehyde	68 ¹	80%	79%
completely eliminated Glut	—	35%	63%
Alternative		% using	% using
Cidex OPA	—	74%	83%
Hydrogen peroxide	—	38%	38%
Steam sterilization	—	53%	58%
Plasma	—	23%	8%
Other	—	11%	17%

1) In 2009 the question combined reduction or elimination EtO, so this number is artificially high.

Green Cleaning

The 2009 Metrics Benchmark report stated that 93% of the 2009 PFC winners reported using some green cleaning techniques, but that number was possibly suspect because green cleaning was not defined in the application. The 2010 results for green cleaning are much more detailed, as presented below. Table 19 shows the number of respondents who indicated that they use green cleaning techniques, products, or equipment that are Green Seal or other certified.

There is a lot of interesting data in this table. For example, 84% of PFC and 96% of ELC winners use micro fiber mop systems; and 64% and 96% of PFC and ELC winners, respectively, have installed flooring that does not require regular stripping and/or polishing. You will note that most facilities do their cleaning in-house.

TREND: Green cleaning and recognition of the value of reduced toxicity in the cleaning process is of interest in health care today and a diverse number of offerings round out the opportunities to green environmental services departments.

OPPORTUNITY: The numbers indicate that this is an area for potential growth and there *are* green cleaning products being offered in the marketplace right now.

Table 19: Green Cleaning

GREEN CLEANING	2010 PFC winners	2010 ELC winners
Have a building specific Green Cleaning Plan for their facility, such as the one outlined in the Green Seal Certification Checklist, standard GS-42	54%	67%
Environmental Services performs their cleaning	84% ¹	96% ²
Outsource (some or all of) their cleaning services	13% ¹	8% ²
Use some green cleaning chemicals or products at their facility	90%	92%
Use some techniques for minimal chemical use	71%	92%
Cleaners		
General purpose (hard surface) cleaners	75%	83%
Glass Cleaners	77%	75%
Carpet and Upholstery Cleaners	46%	54%
Cleaning and Degreasing Compounds	39%	54%
Floor cleaners, strippers, waxes	56%	71%
Metal Polish	19%	29%
Drain/Grease trap additives	15%	25%
Fragrances/Odor control additives	21%	25%
Laundry Soaps/ Cleaners	18%	29%
Antimicrobial Liquid hand soap	29%	25%
Other	13%	33%
List Certification other than Green Seal as necessary	8%	4%

GREEN CLEANING	2010 PFC winners	2010 ELC winners
Cleaners – Have you:		
Collaborated with the Infection Control Committee to identify areas where use of disinfectants can be minimized or eliminated	83%	96%
Used a dilution control system for chemicals?	89%	92%
Disposable Products – Do you:		
Select bathroom paper products with a preference for recycled content ?	82%	92%
Select bathroom paper products with a preference for chlorine free products?	60%	83%
Use fragrance free products?	70%	83%
Avoid aerosolized cleaning products?	86%	100%
Avoid fragrance emitting devices , e.g. air fresheners, fragrance or deodorizer sprays and urinal blocks?	44%	54%
Have you evaluated paper dispensing systems to ensure optimal product efficacy?	80%	79%
Other	7%	13%
Powered Cleaning Equipment³		
Do you use, or specify, powered cleaning equipment (scrubbers, burnishers, extractors, vacuums, or power washers) that is Green Seal or other certified?	54%	54%
Is this equipment designed to minimize vibration, noise, and user fatigue ?	75%	92%
Is this equipment operated with a sound level of less than 70 db ?	66%	75%
Does this equipment capture fine particulate matter ?	65%	71%
Flooring		
Do you use micro fiber mops ?	84%	96%
Has your facility installed flooring that does not require regular stripping and/or polishing ?	64%	96%
Other (or comments)	16%	25%

- 1) Please note that these numbers do not add up to 100 because not everyone answered this question.
- 2) Please note that these numbers do not add up to 100 because they are not mutually exclusive, a few facilities reported outsourcing some of their cleaning.
- 3) Green Seal does not actually certify powered cleaning equipment, however the Carpet and Rug Institute has a Green Label program for vacuums and carpet cleaning equipment.

Integrated Pest Management (IPM)

Sixty-seven percent (67%) of our 2009 PFC winners had reported using some Integrated Pest Management techniques, however there was only minimal guidance provided for that question. The 2010 results presented in Table 20 are much more detailed and show the percentage of facilities that are using true integrated pest management (IPM), which revolve around reducing a pest's habitat instead of using chemical pesticides, particularly as a first line of treatment. This is the one example where the PFC facilities scored consistently higher than the ELC facilities.

All applicants were very forthcoming with specific IPM stories, and reported using IPM to successfully deal with rodents, gnats, beetles, mosquitoes, a number of different types of flies, and even birds, to name a few!

TREND: A very high percentage of PFC and ELC facilities are successfully using a host of IPM techniques to control a wide range of unwanted pests.

Table 20: Integrated Pest Management

Integrated Pest Management	% 2010 PFC winners	% 2010 ELC winners
Has reduced the use of chemical pesticides through the implementation of an integrated pest management (IPM) program	82%	79%
Developed an IPM Plan for this facility	77%	71%
Designated an IPM coordinator to supervise all pest elimination activity	75%	67%
Developed a plan for training of all hospital staff on pests, pesticides, and their role in the facility IPM program	33%	29%
Inspected facility for signs of pest activity and conditions that may lead to pest infestation	86%	88%
Facilitated removal of food waste consistent with IPM	77%	79%
Inspected building roofs , checked bird netting, sealed roof parapets and caps	89%	75%
Use and regularly check bait stations (as a last resort) instead of sprays	89%	79%
Ensured that devices such as bait stations placed in outside areas are locked , secured, clean and in good working order.	88%	71%
Eliminated cracks and holes to keep pests out	88%	83%
Installed door sweeps to keep pests out	83%	79%
Implemented and enforce sanitation procedures to limit pests' access to food and drink. (Address leaky faucets, condensation on pipes, and all edibles.)	89%	79%
Fixed moisture problems (leaks and condensation on pipes)	84%	88%
Used physical barriers to block pest entry and movement (such as door sweeps, screens at chimneys and air intakes, window screens).	80%	79%
Minimized the entry of contaminants into the building from pesticides	77%	63%
Ensured mulch is not used immediately next to building façade	50%	63%
IPM Policy		
Ensured IPM policy is included in all pest control bid specifications when outsourcing pest elimination contracts?	61%	50%
Contracted with pest control companies that meet 100% of the requirements for IPM certification .	64%	54%

Solvent Distillation

Tables 21 and 22 and Figure B illustrate the percentages of Award winners that are distilling solvents, alcohol, or other chemicals and reaping the financial benefits; payback periods are reportedly very short for these types of projects because a facility saves both the cost of the virgin solvent *and* the cost of disposing of the spent solvent as hazardous waste. Payback periods as short as 6 months have been reported.

Table 21: Solvent Distillation

Solvent Distillation	% 2009 PFC winners	% 2010 PFC winners	% 2010 ELC winners
Has a program to recycle or distill solvents, alcohols or other chemicals from the lab	52%	46%	71%
Distill Xylene	—	32%	63%
Distill Alcohol	—	29%	58%
Distill Formalin	—	22%	29%

Figure B: Solvent Distillation - Visual Comparison

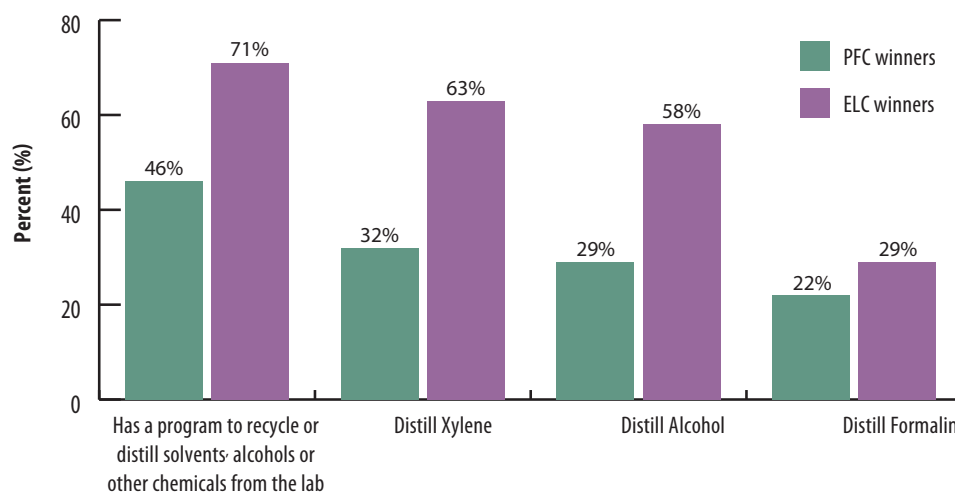


Table 22: Savings from Recycling Solvents

Solvent Distillation	2010 PFC winners	2010 ELC winners
Combined savings for all facilities	\$290,000.00	\$120,000.00
Average Savings per facility	\$12,660.00	\$12,000.00
Average Savings per staffed bed	\$44.50	\$38.50
Average Savings per APD	\$0.08	\$0.28

VII. ENVIRONMENTALLY PREFERABLE PURCHASING (EPP) PRODUCTS AND PRACTICES

Environmentally preferable purchasing is big business in healthcare.

TREND: More hospitals are realizing the value of EPP and are working with their GPO on environmentally preferable purchasing with top performers leading the pack.

Table 23: EPP Purchasing Practices

EPP	% 2009 PFC winners	% 2010 PFC winners	% 2010 ELC winners
Have communicated a desire for environmentally preferable products with their GPO	—	89%	92%
Has an Environmentally Preferable Purchasing (EPP) policy	68%	70%	71%
Product evaluation committee considers environmental impacts in its selection process	77%	82%	92%

Table 24 compares the purchasing practices and policies of 2010 PFC and ELC Award winners. The first row of the table is read as: “89% of PFC Award winners evaluate mercury in their purchasing decisions, but only 50% have mercury specifically mentioned in their purchasing policies; 71% of ELC winners evaluate mercury in their purchasing decisions, but only 58% specifically mention mercury in their purchasing policies.

OPPORTUNITY: While hospitals are taking steps to avoid persistent chemicals at purchase, there is substantial opportunity in updating and formalizing chemical policy for the hospital and health system.

Table 24: EPP Purchasing Practices and Policies

Material/Chemical	Evaluated in purchasing – % 2010 PFC winners	Had language in policy – % 2010 PFC winners	Evaluated in purchasing – % 2010 ELC winners	Had language in policy – % 2010 ELC winners
Mercury	89%	50%	71%	58%
Lead	54%	16%	50%	25%
PBTs (persistent bioaccumulative toxics)	29%	28%	29%	25%
DEHP (di-2-ethylhexylphthalate)	61%	25%	58%	21%
PVC (vinyl, polyvinyl chloride plastics)	56%	26%	58%	38%
Halogenated, chlorinated or bromated flame retardants	43%	18%	38%	33%
Phthalates	27%	18%	25%	25%

Material/Chemical	Evaluated in purchasing – % 2010 PFC winners	Had language in policy – % 2010 PFC winners	Evaluated in purchasing – % 2010 ELC winners	Had language in policy – % 2010 ELC winners
Carcinogens, mutagens, reproductive toxics	48%	20%	50%	25%
Bisphenol-A	37%	19%	33%	8%
VOCs (volatile organic compounds)	58%	16%	67%	17%
Latex	76%	22%	83%	25%
Halogenated plastics	19%	4%	29%	8%
Perfluorinated compounds	11%	2%	29%	8%
Benzidine dyes and pigments	18%	2%	33%	8%
Lubricant parafins	11%	2%	25%	13%
Other:	6%	4%	4%	4%

TREND: Energy Conservation strategies are clearly on the minds of green teams but formal language should be created to steer energy conservation strategies, as reflected in the table below.

Table 25: EPP Purchasing Practices and Policies Expanded

Attribute	Evaluated in purchasing – % 2010 PFC winners	Included in policy – % 2010 PFC winners	Evaluated in purchasing – % 2010 ELC winners	Included in policy – % 2010 ELC winners
Energy Efficiency	76%	35%	83%	33%
Water Efficiency	65%	32%	79%	25%
Excessive packaging	52%	31%	54%	25%
Reducing plastics that are not as easy to recycle as #1 and #2?	34%	8%	50%	13%
Durability/expected length of service	61%	10%	75%	25%
Life Cycle Analysis	44%	10%	38%	25%
Whether the product becomes or generates hazardous waste	61%	18%	58%	33%
Other Criteria	12%	7%	8%	8%

Electronics

Table 26 reports how many facilities are involved with EPEAT and recycling and donation of used electronic equipment.

TREND: PFC and ELC winners outperform business and industry overall.

OPPORTUNITY: More healthcare facilities could maximize the opportunities available through EPEAT specifications/criteria; information can be found at <http://www.epeat.net>.

In the U.S., only 11-14% of our electronic waste is sent to recyclers and the rest is dumped or burned. Even electronic waste (such as computers, monitors and medical devices) that is sent to recycling services may not be properly handled. According to e-Stewards, recyclers send an estimated 70-80% of their electronic waste to less developed countries where they are burned in large piles for metals, exposing people and the environment to a host of toxins. To avoid this, ask for e-waste recyclers (or ask your GPO for e-waste recyclers) who have taken additional steps to be environmentally responsible. We suggest asking for recyclers who are involved in the e-Stewards® program (<http://e-stewards.org/find-a-recycler/>).

Table 26: EPEAT and Waste Electronics

Activity	2010 PFC winners	2010 ELC winners
Do you use EPEAT standards for purchasing electronic equipment?	41%	63%
Is your organization an EPEAT Partner? (see http://www.epeat.net/Partners/Purchasing/)	24%	17%
Does your organization have a policy requiring or preferring the purchase of EPEAT-registered products?	28%	54%
Do you manage your old computers and E-Wastes as Universal waste?	61%	79%
Do you donate your used or obsolete computers?	61%	50%

Reusable Linens

The 2010 PFC/ELC application requested detailed information on reusable linens. Table 27 summarizes that data and reports on the specific types of reusable linens most commonly used. The table can be read as follows: Twelve percent (12%) of 2010 PFC winners and 29% of ELC winners are using reusable drapes *less* than half of the time. Twenty-one percent (21%) of PFC winners and 13% of ELC winners are using reusable drapes *more* than half of the time.

TREND: The data identifies a strategy that is in its early stages and will be an interesting data set to watch going forward. Reusable scrubs are by far the most popular reusable linens.

OPPORTUNITY: As more hospitals are taking a closer look at reusable linens and evaluating the benefits of going back to reusables, there is substantial opportunity in this area.

Table 27: Reusable Linens

Are you using these reusable items at your facility?	0<x<50% reusables 2010 PFC winners	0<x<50% reusables 2010 ELC winners	≥50% reusables 2010 PFC winners	≥50% reusables 2010 ELC winners
Surgical Drapes	12%	29%	21%	13%
Surgical Gowns	19%	33%	28%	54%
Incontinent Products (Underpads & Briefs)	19%	13%	38%	50%
Isolations Gowns	12%	25%	32%	38%
Scrubs	2%	0%	85%	100%
Surgical Packs (sterile and nonsterile)	19%	33%	22%	46%

Other Reusable Products

This year, the report can identify *which* items are most commonly switched to reusable.

OPPORTUNITY: There is an opportunity to learn from top performers in this area and investigate transition from disposable to reusable items.

Table 28: Reusable Products

Reusable Items used for:	Reuse this item- 2010 PFC winners	Reuse this item- 2010 ELC winners
Totes for internal deliveries	60%	83%
Shipping containers (totes)	45%	50%
RMW shipping	41%	75%
Rigid sterile cases for surgical items	50%	63%
Pharmacy waste containers	36%	42%
Surgical basins/ biowaste tubs	29%	58%
Trocar (tubing)	20%	17%
Other – describe	12%	21%

VIII. FOOD

Sustainable projects in the cafeteria and food services are becoming ever more popular, and are showing up all over the country, including reducing the use of meat. Most recently, some hospitals have pledged not to buy meat raised with antibiotics. The 2010 PFC/ELC application attempted to capture some healthy food trends.

Table 29 illustrates the percentages of PFC and ELC winners who have signed Health Care without Harm's (HCWH) Healthy Food Pledge and/or have signed onto their Balanced Menus Program

Table 29: HCWH Food Pledges

Food Pledges	2010 PFC winners	2010 ELC winners
Have signed the Healthy Food Pledge ¹	47%	54%
Have implemented a "Balanced Menus" program ²	37%	29%

1) HCWH Health Food Pledge: (http://72.32.87.20/us_canada/issues/food/pledge.php)

2) HCWH Balanced Menus Program: (http://72.32.87.20/lib/downloads/food/Balanced_Menus_Challenge.pdf)

Another opportunity for sustainability in the cafeteria and food services operations lies in reducing the tons of solid waste generated therein. The three tables below illustrate how much progress our Award winners have made in this area. A good discussion on **Choosing Environmentally Preferable Food Service Ware** is presented by HealthCare without Harm at: http://www.noharm.org/lib/downloads/food/EPP_Food_Svc_Ware.pdf

Table 30 compares the percentages of PFC and ELC winning facilities that have switched some or all of their disposable food service items to reusable items.

TREND: While there is interest in reusable items in food services, this is an area of potential growth going forward for all of our Award winners, and would be a good goal for some of our food service leads.

Table 30: Reusable Food Service and Cafeteria Items

Disposable food service items	Use Some reusable- 2010 PFC winners	Use Some reusable- 2010 ELC winners	Use all reusable- 2010 PFC winners	Use all reusable- 2010 ELC winners
Flatware in the cafeteria	37%	54%	8%	21%
Flatware for patient food service	16%	17%	58%	71%
Plates and dishes in the cafeteria	39%	38%	13%	29%
Plates and dishes for patient food service	19%	21%	68%	67%
Clamshells (leftover containers)	11%	33%	8%	8%
Other	10%	4%	6%	4%

Tables 31a and 31b reflect the healthcare industry's move toward biodegradable products. Table 31a illustrates the percentage of PFC winning facilities that are using paper or other biodegradable products and table 31b does the same for ELC winners. Paper or biodegradable products are most beneficial when composted rather than disposed in a regular municipal landfill. The biodegradable alternatives reported were composed of a variety of materials, including: corn, corn starch, sugarcane, bamboo, and cotton seed.

TREND: Hospitals take one step at a time on environmental initiatives, and food services is no different. We know from working with members that this is a tough area to find quality and pricing that meets the needs of the organization. We expect continued growth in this area as markets continue to develop and buy-in increases.

The first row in Table 31a can be read as follows: in 2010, 12% of PFC winners were using other biodegradable products for flatware in the cafeteria, while 6% had switched completely to biodegradable materials.

Table 31a: Paper and Biodegradable Products Use by 2010 PFC Winners

Paper or other biodegradable products	Some are paper 2010 PFC winners	All are Paper 2010 PFC winners	Some products are biodegradable 2010 PFC winners	All products are biodegradable 2010 PFC winners
Flatware in the cafeteria	—	—	12%	6%
Flatware for patient food service	—	—	4%	3%
Plates and dishes in the cafeteria	26%	6%	19%	13%
Plates and dishes for patient food service	13%	1%	10%	4%
Clamshells (leftover containers)	8%	4%	14%	9%
Other items	9%	6%	6%	6%

Table 31b can be read as follows: in 2010, 25% of PFC winners were using other biodegradable products for flatware in the cafeteria, while 17% had switched completely to biodegradable materials.

Table 31b: Paper and Biodegradable Products Use by 2010 ELC winners

Paper or other biodegradable products	Some are paper 2010 ELC winners	All are paper 2010 ELC winners	Some products are biodegradable 2010 ELC winners	All products are biodegradable 2010 ELC winners
Flatware in the cafeteria	—	—	25%	17%
Flatware for patient food service	—	—	4%	4%
Plates and dishes in the cafeteria	33%	4%	25%	17%
Plates and dishes for patient food service	17%	0%	0%	4%
Clamshells (leftover containers)	8%	4%	21%	29%
Other items	0%	0%	8%	38%

Styrofoam Elimination

The 2009 Awards Metrics Benchmark Report stated that 60% of 2009 PFC winners indicated they have reduced their use of Styrofoam products and are using paper or biodegradable products, but only 25% were able to completely eliminate Styrofoam. Tables 32a and 32b illustrate in much more detail how far healthcare facilities have come in eliminating Styrofoam from their cafeteria and food service programs and where they have the most room for growth.

Table 32a can be read as follows: 22% of 2010 PFC winners do not use Styrofoam plates and dishes in their cafeteria; 26% have replaced *some* of their Styrofoam plates and dishes in the cafe; 11% have replaced *all* of their Styrofoam plates and dishes in the cafeteria, and 22% are still using Styrofoam for all plates and dishes.

TREND: The data shows that this is an area that some hospitals are working on and kudos to those that have been successful in reducing their use of Styrofoam. We know from working with hospitals that this is a tough area to reach an acceptable price point because Styrofoam is so inexpensive.

OPPORTUNITY: We don't even need data to know that virtually all Practice Greenhealth members want to get rid of Styrofoam! We know this because we hear it every single day. This table can help push markets and message the marketplace of the need for product, quality and reduced pricing in this arena.

Table 32a: Styrofoam Products Use by 2010 PFC Winners

Disposable Styrofoam food service item	These items are not Styrofoam 2010 PFC winners	Some items have been replaced 2010 PFC winners	All have been replaced 2010 PFC winners	Still using Styrofoam for these items 2010 PFC winners
Plates and dishes for food service in cafeteria	22%	26%	11%	22%
Plates and dishes for patient food service	44%	18%	18%	6%
Clamshells (leftover containers)	19%	9%	13%	26%
Other	4%	5%	4%	4%

Table 32b can be read as follows: 50% of 2010 ELC winners do not use Styrofoam plates and dishes in their cafeteria; 21% have replaced *some* of their Styrofoam plates and dishes in the cafe; 29% have replaced *all* of their Styrofoam plates and dishes in the cafeteria, and only 4% are still using Styrofoam for all plates and dishes.

Table 32b: Styrofoam Products Use by 2010 ELC Winners

Disposable Styrofoam food service item	These items are not Styrofoam 2010 ELC winners	Some items have been replaced 2010 ELC winners	All have been replaced 2010 ELC winners	Still using Styrofoam for these items 2010 ELC winners
Plates and dishes for food service in cafeteria	50%	21%	29%	4%
Plates and dishes for patient food service	71%	8%	33%	0%
Clamshells (leftover containers)	46%	21%	29%	13%
Other	0%	4%	8%	0%

Local and Organic Food Purchasing

By developing relationships with local farmers, and purchasing local and/or organic products, healthcare facilities can offer healthier food, reduce hydrocarbon use, and support the local economy. Table 33 and Figure C illustrate the healthcare industry's support towards this movement.

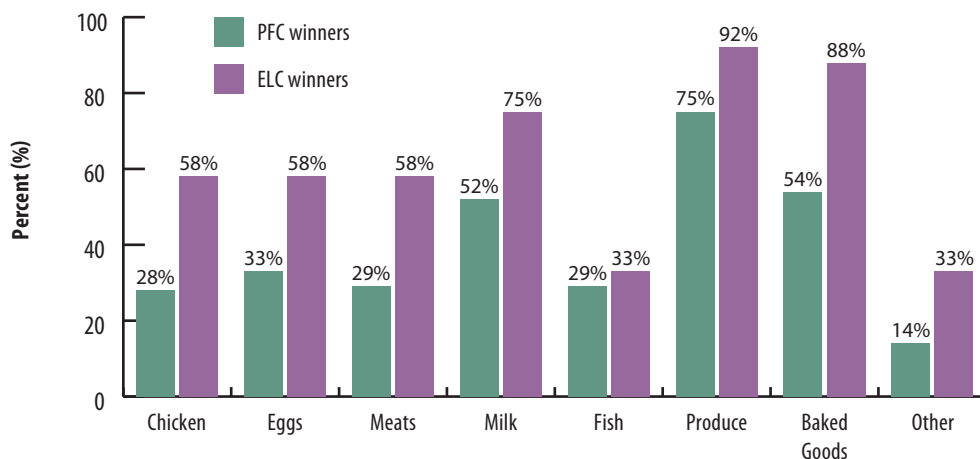
Practice Greenhealth recognizes that small farmers may be running their operations along organic guidelines, but have not gone through the certification process. Any of these options is considered a step in the right direction. We are thrilled to be able to report that 64% of PFC winners and fully 88% of ELC winners reported establishing relationships with local farmers!

TREND: There is interest in healthy food in health care and hospitals are identifying local providers.

Table 33: Local and Organic Food

Local and Organic Food	2010 PFC winners	2010 ELC winners
Have established relationships with local farmers	64%	88%
Have offered employees reusable water bottles, coffee or travel mugs	76%	83%
Buy local and/or organic:		
Chicken	28%	58%
Eggs	33%	58%
Meats	29%	58%
Milk	52%	75%
Fish	29%	33%
Produce	75%	92%
Baked goods	54%	88%
Other	14%	33%

Figure C: Local and Organic Food Purchasing - Visual Comparison



TREND: Due to land-filling issues surrounding the disposal of plastic water bottles, many hospitals have begun reducing their use. The most success has been made in eliminating bottled water in patient services and meeting rooms.

Table 34: Bottled Water

Have eliminated bottled water in:	2010 PFC winners	2010 ELC winners
Cafeteria	6%	17%
Patient services	22%	38%
Meeting rooms	25%	46%
Vending machines	4%	8%
Other	8%	21%

Healthier Food Choices

TREND: Hospitals are increasingly realizing that healthier food choices are connected to sustainability and wellness.

Table 35: Healthier Food Choices

Healthier Food Choices	2010 PFC winners	2010 ELC winners
Have reduced use of:		
Fat	82%	88%
Trans fats	91%	100%
Salt	75%	71%
Hydrogenated oils	76%	79%
High fructose corn syrup	52%	71%
Portion sizes	60%	58%
Other	13%	21%
Have increased use of:		
Fiber	68%	79%
Whole grains	82%	88%
Other	10%	8%

Only ten percent (10%) of the 2009 PFC winners reported that they were composting, but in 2010 that number rose to 29% (combined on and offsite composting) almost tripling in one year! 2010 ELC winners reported even higher composting rates, coming out at a whopping 66%!

TREND: Healthier food choices and composting are getting increased attention in health care. In addition, healthcare is addressing global issues, by purchasing fair trade coffee.

Table 36: Other Food Projects

Other Food Projects	2010 PFC winners	2010 ELC winners
Have a fast food restaurant on your campus?	6%	17%
...And are considering going to a healthier food provider for your next contract	4%	8%
Offer Fair Trade Coffee	63%	75%
Host a Farmers Market	46%	38%
Offer an employee CSA (community supported agriculture) program	11%	29%
Reduced deep fat fryers	33%	54%
Eliminated deep fat fryers	12%	25%
Compost food waste onsite	4%	8%
Compost food waste offsite	25%	58%
Are working with a GPO on any healthy food initiatives	48%	67%

IX. FACILITIES AND CONSTRUCTION

Energy Efficiency and Water Conservation

Energy

Reducing energy costs is a primary concern across all industries; healthcare is no exception.

Reporting on energy use and conservation, however, is extremely complicated. Reviewing and analyzing energy or electricity data is incredibly complex and can give misleading results. Energy use and pricing is very dependent on geographic location, and our winners are spread from coast to coast. Our winners include many different types of healthcare facilities, with many different types of campuses, parking garages and outbuildings. Although we have taken care to screen the data, it may include unintended errors by applicants of the data reported and resulting analytical errors.

Savings will depend on a number of factors, particularly depending on the scope of the project. We present average aggregate data, for gross comparison purposes, with the understanding that we are averaging some very small projects in with some very large projects. In addition, some facilities reported energy savings only from energy conservation projects implemented in 2009, while others counted the continued savings from projects implemented over the past few years. However, taking all this into consideration, we have summarized our findings on energy, and have taken care to provide sound data.

Our 2010 PFC and ELC Award winners spent nearly \$468 million dollars in combined total energy costs, with electricity representing nearly \$290 million. However, our winners reported savings over \$8 million and reducing CO₂ and greenhouse gas emissions. A number of winners reported saving over a million dollars.

Water

Depending on where you are located, water conservation also has a very high profile. The water conservation data is subject to all of the geographical differences and other potential complications noted above under energy, with the additional caveat that some facilities reported savings only as the dollar value of the water they did not purchase, while others included the decrease in sewerage fees, which provides a more accurate total savings.

Our 2010 winners used nearly four billion gallons of water last year, but also reaped significant savings from water conservation projects. Our winners saved 372 million gallons, reducing their water and/or sewer bills by \$3.7 million.

Table 37 presents details on our winners' activities in US EPA's Energy Star program, and provides some break down on reported water and energy savings.

ENERGY STAR: In 2009, 38% of PFC winners reported that they were members of US EPA's Energy Star Program, and by 2010, this has grown to 57% of PFC and 75% of ELC winners. The average Energy Star rating for 2010 PFC and ELC winners was 58, and 59 respectively.

TREND: Some facilities are reaping significant savings through energy and water conservation projects. Use of Energy Star has increased for PGH winners and three out of four top performing facilities are Energy Star Partners.

OPPORTUNITY: While water conservation is getting attention, it could be a potential goal for some facilities. Also, there is room for improvement in Energy Star ratings.

Table 37: Energy Efficiency and Water Conservation

Energy Efficiency and Water Conservation	2009 PFC winners	2010 PFC winners	2010 ELC winners
Energy Efficiency			
Are EnergyStar Partners	38%	57%	75%
Average Energy Star rating for their building	—	58	59
Range of Energy Star ratings	—	16 to 95	27 to 84
Participate in the E²C Program (between ASHE and EnergyStar)	8%	19%	21%
Engaged in energy efficiency projects	97%	82%	88%
Cost of all types of energy per staffed bed	—	\$13,215	\$12,190
Cost of all types of energy per APD	—	\$31	\$33
Total Dollars saved (from energy efficiency projects)	—	\$4.9 million	\$3.4 million
Total Energy saved in millions of kWh (from these projects)	—	47.3 ²	39.1 ²
Average savings generated from energy efficiency projects (presented as % of total electricity costs)	—	5.5%	4.8%
Average Savings in dollars per staffed bed per day (from these projects)	—	\$1.05	\$3.00 ¹
Average Savings in dollars per APD (from these projects)	—	\$0.72	\$1.29 ¹
Water Use and Conservation			
Total gallons used annually in billions of gallons	—	2.641	1.322
Average annual water usage in gallons per staffed bed/day	—	452	388
Average annual water usage in gallons per APD	—	382	375
Engaged in water conservation projects	80%	69%	79%
Total gallons saved (from conservation projects)	—	234,183,000	137,596,000
Total dollars saved (from conservation projects)	—	\$1,185,000	\$2,478,000
Average per facility reported % of annual water use conserved (from water conservation projects)	—	8%	5%
Water conserved in gallons per staffed bed per day (from those projects)	—	54	39
Water conserved in gallons per APD (from those projects)	—	39	50
Savings in dollars per staffed bed per day (from those projects)	—	\$0.29	\$0.14
Savings in dollars per APD (from those projects)	—	\$0.30	\$0.32

1) This number is relatively high as a function of outstanding achievement among ELC Winners.

2) This is likely an under-estimated number, due to discrepancies in the data submitted.

So which energy and water efficiency projects are actually getting implemented at hospital across the country? And where are the opportunities? These questions are answered, in part, in the tables 38 to 42, below. This year, Practice Greenhealth is proud to be able to report out on exactly what type of energy and water saving projects healthcare facilities are engaging in.

TREND: There is a lot going on in energy efficiency in healthcare right now. Lighting upgrades, optimization of chillers, and commissioning top the list of “most performed” energy efficiency projects.

OPPORTUNITY: This data set suggests looking at top performers’ percentages to set some goals on energy and water conservation. These tables present a myriad of potential projects for facilities and engineering teams.

Table 38: Energy Efficiency Projects

Energy Efficiency	2010 PFC winners	2010 ELC winners
Implement building envelope improvements to reduce energy requirements, including, for example, insulation, window and door replacements.	55%	75%
Use evaporative cooling when ambient conditions allow.	32%	54%
Reset space temperatures based on usage and occupancy.	75%	79%
Integrate day-lighting strategies to decrease building energy demand.	56%	79%
Operate chiller plants that use various technologies and strategies to reduce overall plant energy consumption at full and partial loads (such as chillers with variable speed drives on the compressors, primary-only variable flow pumping, series- counter-flow chiller arrangements, etc.).	73%	83%
Utilize chiller optimization program (software) to determine best use of chiller sequencing based on efficiencies at various loads.	61%	88%
Minimize leakage in air handling units and ductwork to reduce overall fan horsepower while ensuring that air is properly filtered.	73%	83%
Retrofit using variable speed drives (VFD's) for motors and pumps, and Energy Star-rated equipment to reduce electrical consumption.	76%	79%
Install energy efficiency lighting devices, such as: LED exit signs, fluorescents, Energy Star qualified lighting fixtures, occupancy sensor and sunlight harvesting controls. Implement energy-efficiency retrofits and energy-saving techniques to reduce energy use to the level required to earn this credit.	95%	96%
Other Projects	26%	50%

Table 39: Refrigerant Management

Refrigerant Management	2010 PFC winners	2010 ELC winners
Use non-CFC-based HVAC&R equipment which is often more efficient than CFC-based equipment and can improve overall facility energy performance.	62%	75%
Set up leakage minimization procedures and systems to meet annual leakage minimization standards and reporting requirements. (For more information, see U.S. EPA's "Complying with the Section 608 Refrigerant Recycling Rule.")	54%	75%
When reusing existing HVAC systems, conduct an inventory to identify equipment that uses CFC refrigerants and provide a phase out schedule for these refrigerants.	55%	67%

Table 40: Commissioning

Commissioning	2010 PFC winners	2010 ELC winners
Incorporate into the commissioning program regular inspections of the mechanical ventilation system to identify if the filters are clean, not overloaded and without leaks or tears and insure that drip pans are free of standing water or other contaminants.	81%	96%
Ensure that the commissioning program addresses, at a minimum, the following: heating system, cooling system, humidity control system, lighting system, safety systems, building envelope, domestic water pumping systems and the building automation controls.	74%	92%

Table 41: Potable Water Use Reduction: Table 1

Potable Water Use Reduction: Table 1	2010 PFC winners	2010 ELC winners
Reduced fixture water usage through automatic controls and other actions.	76%	75%
Specify water conserving plumbing fixtures and fittings that exceed the UPC or IPC fixture and fitting performance requirements in combination with high efficiency or dry fixture and control technologies.	55%	83%
Indoor Plumbing Fixture and Fitting Efficiency: Have you:		
Reclaimed any potable "grey" water drains, cooling coil condensate, and/or captured rainwater for filtration and treatment to use in non-potable process water needs such as process cooling (sterilizers) or cooling tower water make-up.	6%	17%
Tracked your facility's water consumption (for free) using the water tracking feature of U.S. EPA's Energy Star® National Energy Performance Rating System, found within Portfolio Manager at http://www.energystar.gov/benchmark .	21%	17%
Recorded meter and document reclaimed potable water use for further non-potable process use (i.e. cooling tower and boiler water make-up).	15%	21%
Calculated annual fixture potable water use per occupant and per square foot.	11%	25%
Water Efficient Landscaping: Have you:		
Implemented and maintain high efficiency irrigation technologies that include micro irrigation, moisture sensors, or weather data based controllers.	26%	54%
Fed irrigation systems with captured rainwater, gray water (site or municipal), or on-site treated wastewater. Using reclaimed water for selected applications can reduce costs and preserve precious potable water supplies.	5%	17%
Considered eliminating use of an irrigation system. Consider use of xeriscaping principles. Select water efficient, native or adapted, non-invasive climate tolerant plantings.	32%	46%
Other Projects	16%	29%

Table 42: Potable Water Use Reduction: Cooling Towers: Table 2

Potable Water Use Reduction: Cooling Towers: Table 2	2010 PFC winners	2010 ELC winners
Worked with a water treatment specialist to develop a water management strategy addressing the appropriate chemical treatment and bleed-off to ensure proper concentration levels in the cooling tower.	77%	96%
Explored technologies and strategies to eliminate chemical waste to drain in cooling tower and boiler blowdown.	58%	71%
Treated blowdown so that chemical treatment can be reclaimed for re-use.	11%	17%
Implemented a water management plan for the cooling tower that addresses chemical treatment, bleed-off, biological control and staff training for to cooling tower maintenance.	70%	71%
Improved water efficiency by installing and/or maintaining a conductivity meter and automatic controls to adjust the bleed rate and maintain proper concentration at all times.	62%	67%
Employed non-toxic treatment chemicals or chemical-free cooling tower systems.	25%	29%
Used make-up water that consists of at least 50% non-potable water.	3%	4%
Used non-potable makeup water? If so, please list what types of makeup water you have used. (E.G. rainwater, A/C condensate, cooling tower water blow down).	6%	13%
Other Projects	4%	29%

X. TRANSPORTATION

A number of 2009 PFC Award winners reported that they were addressing transportation challenges by encouraging their employees to walk, bike, carpool, or take public transportation to work. Table 43 illustrates specifically which techniques 2010 Awards winners are using to encourage their employees to reduce transportation miles. Many of the activities below can be implemented by rural or urban facilities.

TREND: Many hospitals are using creative techniques to encourage their employees to get out of their cars, with providing bike racks and locker rooms topping the list.

OPPORTUNITY: This table shows that there is still a lot of room for growth in most transportation areas, specifically in reimbursing for public transportation fees and offering other incentives.

Table 43: Alternative Transportation

Transportation	2010 PFC winners	2010 ELC winners
Reimbursed public transportation fees	35%	38%
Organized car pools	61%	67%
Made bike racks available	82%	100%
Provided locker rooms and shower facilities	69%	92%
Offered shuttle services to/from public transportation and/or between our facilities	48%	58%
Provided desired parking for carpoolers (e.g. closer, covered...)	35%	54%
Encouraged teleconferencing instead of meetings	82%	67%
Encouraged carpooling to offsite classes and meetings	76%	71%
Offered other incentives (e.g. free lunches)	25%	38%

XI. A CULTURE OF SUSTAINABILITY: OTHER INNOVATIVE ENVIRONMENTAL INITIATIVES

Many facilities are truly changing the cultures within their organizations. In 2010, PFC and ELC Award applicants reported many different, impressive activities to illustrate their culture of sustainability, and included projects that did not really fit into the rest of the application. 2010 Projects included, but were certainly not limited to: offering free meals to the needy, offering healthier food cooking classes to the community, donating an old hospital building to the city, providing inner city youth camps during the summer, converting deserted parking lots into gardens, performing 50 acts of kindness, planting trees for earth day, etc. In order to better quantify these types of efforts, we are including two new tables in the 2011 PFC Award application in this section, and will report in more detail in the 2011 Benchmark Report.

XII. APPENDICES

Appendix A: Recycled Materials

This year, data collected from the Award application's Appendix A indicated that recycling helped PFC and ELC Award winners divert over **1.4 million tons** of waste from solid and hazardous waste streams.

Table 44, presents a list of materials recycled as reported in Appendix A, organized from the highest to lowest *occurrence* based on the 2010 PFC winners. In other words, the materials are ranked from the most to the least recycled items. Please note that the 2010 data for cardboard was compromised, as there was an input error on the application. Both single-stream and co-mingled recycling are listed separately in the tables below, because, as we understand it, both recycling types *generally* combine glass, plastic and aluminum, but single-stream recycling also includes paper. So, are facilities making or losing money on recyclables? To find out, Practice Greenhealth analyzed data from the 12 ELC facilities that reported recycling cost information.

TREND: The top five most highly recycled materials in 2010 were batteries, fluorescent lamps, mixed paper, computers and electronics and, likely, cardboard. In 2009 the list looked the same, except that toner cartridges replaced mixed paper. These lists highlight the efforts hospitals are making to segregate their Universal Wastes in order to reduce their hazardous waste stream and associated costs.

TREND: While many facilities had used their recycling dollars to pay for environmental programs in the past, recent fluctuations in the recycled materials markets over the last couple of years have drastically cut many of these profits. Half of the 2010 ELC hospitals reported making money on their recycling programs (best case over \$181,000) and half reported losing money (worst case, almost \$88,000).

Table 44: Recycled Materials Sorted by Occurrence (highest to lowest)

Material recycled	% of 2009 PFC winners	% of 2010 PFC winners	% of 2010 ELC winners
Cardboard	92	Error on app ¹	Error on app ¹
Batteries	90	90	92
Fluorescent lamps	92	88	92
Paper, mixed	75	84	92
Computers /Electronics	82	80	92
Toner cartridges	82	75	71
Oil (cooking)	<78 ²	73	75
Pallets	7	70	79
Cans, Aluminum	65	69	75
Equipment Donation	70	69	75
Co-mingled Recycling	—	63	71
Ink jet cartridges	50	63	67

Material recycled	% of 2009 PFC winners	% of 2010 PFC winners	% of 2010 ELC winners
Paper, white	78	61	79
Newspaper	58	57	83
SUD Reprocessing ³	22	56	75
Reusable sharps containers ³	25	53	67
Cans, Steel	47	51	75
Steel (listed as steel cans in 2009)	47	47	88
Oil (motor)	<78 ²	46	71
Plastic, mixed	57	46	58
Plastic, #2 HDPE	40	42	63
Glass, mixed	27	41	58
Plastic, #1PET	40	41	67
Boxboard	20	40	67
Glass, clear	33	39	50
Linens (reused for rags only)	47	37	46
Blue Wrap	12	34	58
Glass, colored	28	33	42
Single Stream Recycling	—	32	25
Plastic, #5 polypropylene	27	31	50
Solvent distillation	38	30	67
Plastic, #6 PS	28	29	46
Shrink wrap	22	28	38
X-ray film	37	27	58
Foam peanuts	28	26	58
Food waste (composting)	17	25	71
Landscape (composting)	28	25	67
Food donation	33	24	42
Wood	17	24	50
Other	33	34	54
Ice packs / coolers	22	20	58

1) There was an error on the 2010 Appendix A application which would not allow data to be entered for cardboard.

2) Cooking oil and motor oil were combined in the 2009 application.

3) The data reported in Appendix A for SUDs and reusable sharps in 2009 was much lower than reported in the RMW section of the applications.

The same recycling information is presented in Table 46, but the data is shown sorted *alphabetically*.

TREND: We have seen big gains in blue wrap recycling, boxboard, and bottle and can recycling. We don't have enough data to report on single stream recycling trends, which anecdotally have been growing in recent years, but will follow up next year.

Table 45: Recycled Materials Sorted Alphabetically

Material recycled	% of 2009 PFC winners	% of 2010 PFC winners	% of 2010 ELC winners
Batteries	90	90	92
Blue Wrap	12	34	58
Boxboard	20	40	67
Cans, Aluminum	65	69	75
Cans, Steel	47	51	75
Cardboard	92	Error on app ¹	Error on app ¹
Co-mingled Recycling	—	63	71
Computers /Electronics	82	80	92
Equipment Donation	70	69	75
Fluorescent lamps	92	88	92
Foam peanuts	28	26	58
Food donation	33	24	42
Food waste (composting)	17	25	71
Glass, clear	33	39	50
Glass, colored	28	33	42
Glass, mixed	27	41	58
Ice packs / coolers	22	20	58
Ink jet cartridges	50	63	67
Landscape (composting)	28	25	67
Linens (reused for rags only)	47	37	46
Newspaper	58	57	83
Oil (cooking)	<78 ²	73	75
Oil (motor)	<78 ²	46	71
Pallets	7	70	79
Paper, mixed	75	84	92
Paper, white	78	61	79
Plastic, #1PET	40	41	67

Material recycled	% of 2009 PFC winners	% of 2010 PFC winners	% of 2010 ELC winners
Plastic, #2 HDPE	40	42	63
Plastic, #5 polypropylene	27	31	50
Plastic, #6 PS	28	29	46
Plastic, mixed	57	46	58
Reusable sharps containers ³	25	53	67
Shrink wrap	22	28	38
Single Stream Recycling	—	32	25
SUD Reprocessing ³	22	56	75
Solvent distillation	38	30	67
Steel (listed as steel cans in 2009)	47	47	88
Toner cartridges	82	75	71
Wood	17	24	50
X-ray film	37	27	58
Other	33	34	54

1) There was an input error in the application; no data could be entered on some applications.

2) 2009 PFC oil recycling numbers were combined for cooking and motor oil.

3) The data reported in Appendix A for SUDs and reusable sharps is much lower than reported in the RMW section of the applications.

Appendix B: Single Use Device (SUD) Reprocessing

The 2010 Award application's Appendix B was our first attempt to capture what type of SUDs are most commonly reprocessed. The table reports the percentage of facilities that are reprocessing these items.

TREND: The items most commonly reprocessed were: orthopedic burrs and bits; and, in general surgery, pneumatic cuffs and ultrasonic scalpels.

Table 46: SUD Reprocessing

Device	% of 2010 PFC winners reprocess these items	% of 2010 ELC winners reprocess these items
ANESTHESIOLOGY		
Anesthesia Masks	7	8
Laryngeal Airway	11	25
Pulse Oximeter Sensor	33	46
CARDIOVASCULAR		
Pericardiocentesis Tray	4	0
Tissue Stabilizer	4	8
Blood-Pressure Cuff	18	17
Sequential Compression Sleeve	39	54
Electrophysiology Catheters	15	50
Steerable Electrophysiology Catheter	13	38
Balloon Inflation Device	4	17
Inflation Device	2	0
Cardiac Stabilizers & Positioners	5	38
Electrophysiology Catheters	13	46
Diagnostic Electrophysiology Catheter	17	42
Imaging Catheter	6	25
Pulse Oxisensor	24	42
Femoral Compressor Device	8	29
Guidewires	4	8
DENTAL		
Diamond Dental Instrument	6	8
Dental Burs And Blades	12	8
EAR NOSE & THROAT		
ENT Bur	13	17

Device	% of 2010 PFC winners reprocess these items	% of 2010 ELC winners reprocess these items
GASTROENTEROLOGY		
Stone Retrieval Basket	5	8
Biopsy Forceps	14	17
Trocar	27	38
Biopsy Forceps, Hot	10	8
Endoscopic Electrodes	12	8
Hospital Bed Patient Monitoring Alarm	7	13
Pressure Bag	4	4
GENERAL		
Cardiovascular Surgical Saw Blade	13	17
Electrosurgical Electrode	11	25
Pneumatic Tourniquet Cuff	31	58
Disposable Surgical Instruments	20	17
Chisel	6	17
Curette	8	21
Rasp	11	25
Hook	8	21
Gouge	8	13
Laparoscopic Instruments	30	54
Laser Probe	9	21
Saw Blade	26	42
Bur	27	46
Scissor Tips	14	21
Reloadable Cutters & Appliers	20	25
Vessel Sealer/Divider	9	25
Suture Passer	11	33
Ultrasonic Scalpel	32	58
OBSTETRICS & GYNECOLOGY		
Laparoscopic Instruments	23	21
OPHTHALMIC		
Phacoemulsification Tip Needle	4	4
Laser Probe	6	8

Device	% of 2010 PFC winners reprocess these items	% of 2010 ELC winners reprocess these items
ORTHOPEDIC		
Arthroscopy Instruments	29	46
Reamer	11	25
Cartilage Knife	5	21
Burr	30	67
Drill Bit	30	67
Rongeur	7	17
Trephine	4	17
Countersink	5	25
Tap	10	29
External Fixation Device	14	33
Carpal Tunnel Blade	8	21
Orthopedic Cannulas And Trocars	32	46
NEUROLOGY		
Drills, Burrs, Trephines & Accessories	16	21

4.0 CONCLUSIONS

An overall analysis of the data reported presents some rather dramatic totals of savings achieved among the combined 2010 PFC and ELC Award Winners.

Table 47: Summary of Savings for 2010 Award Winners

What was saved	Amount waste diverted or prevented	Dollars saved	Reference
CDD recycling	14,000 tons	—	Table 7
Savings from reprocessing SUDs	80 tons diverted from waste stream (solid and RMW)	\$10.8 million	Table 14
Savings from reusable sharps container programs	700 tons diverted from landfill	\$1.9 million	Table 15
Savings from Solvent Distillation	16,500 gallons (62 tons of hazardous waste)	\$410,000	Table 21
Energy Efficiency— SEE EQUIVALENCY RESULTS, BELOW	86.5 million kWh	\$8.3 million	Table 37
Water Conservation	372 million gallons	\$3.7 million	Table 37
TOTAL	—	\$25 million	—

Equivalency Results*

The savings in total kWh above is equivalent to any one of the following:

- Annual greenhouse gas emissions from 11,878 passenger vehicles
- CO₂ emissions from 6,987,757 gallons of gasoline consumed
- CO₂ emissions from 144,468 barrels of oil consumed
- CO₂ emissions from the electricity use of 7,539 homes for one year
- Carbon sequestered by 1,592,850 tree seedlings grown for 10 years
- Carbon sequestered annually by 13,245 acres of pine or fir forests
- CO₂ emissions from 2,588,382 propane cylinders used for home barbeques

* SOURCES:

US EPA Clean Energy website:
<http://www.epa.gov/cleanenergy/>

Electricity use (kilowatt-hours):
<http://www.epa.gov/cleanenergy/energy-resources/refs.html>

Greenhouse Gas Equivalencies Calculator (updated March 2010):
<http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results>

Please note: The Greenhouse Gas Equivalencies Calculator uses the Emissions & Generation Resource Integrated Database (eGRID) U.S. annual non-baseload CO₂ output emission rate to convert reductions of kilowatt-hours into avoided units of carbon dioxide emissions. Most users of the Equivalencies Calculator who seek equivalencies for electricity-related emissions want to know equivalencies for emissions reductions from energy efficiency or renewable energy programs. These programs are not generally assumed to affect baseload emissions (the emissions from power plants that run all the time), but rather non-baseload generation (power plants that are brought online as necessary to meet demand). Emission Factor = 7.18×10^{-4} metric tons CO₂ / kWh

Practice Greenhealth member hospitals are achieving dramatic reductions in their environmental footprints and are committed to implementing sustainable, eco-friendly practices. While this report represents a snapshot of sustainability activity among Practice Greenhealth member hospitals who are leaders in this effort, we wish to acknowledge the ongoing efforts of all of our members to reduce the environmental impact of their operations.

It is encouraging to see improvement in many areas in 2010 over 2009. In almost every area, the ELC winners outperformed the PFC winners, raising the bar for excellence in healthcare. We hope that facilities will use this report, as well as the Partner for Change/Environmental Leadership Circle Award Application to not only gauge performance, but as a “to do” list, a list of steps along the journey towards sustainability.

Practice Greenhealth would like to thank each of the Partner for Change and Environmental Leadership Circle Award Winners who gathered and submitted the data for the lengthy Award application, without whom this report would not be possible.

DISCLAIMER: This report is based on self-reported data as provided by Practice Greenhealth Environmental Excellence Award applicants and has been compiled by staff. While the data is correct to the best of our knowledge, we can't guarantee that all of the data presented herein is flawless.