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2009 Award Metrics Benchmark Report

A Practice Greenhealth Member Benefit

November 2009

Practice Greenhealth

Environmental Excellence Awards
Metrics Benchmark Report
2009 Awards Cycle

1. INTRODUCTION

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 (the focus of the 1998 Memorandum of Understanding between the American Hospital Association and the Environmental Protection Agency) recognizing that sustainability can reach all materials and departments within a health care facility. Innovative projects are being implemented through a broad range of programs, from extensive recycling programs, to safer materials purchasing, to utilities management. Hospitals are offering local and organic foods in cafeterias, addressing transportation issues, and designing healthier environments. The Green Guide for Health Care and LEED principles are being employed in new construction and renovation projects, including energy efficiency, building with non-toxic, regionally sourced and low maintenance materials, installation of green roofs and healing gardens, and using xeriscaping techniques to produce landscapes that do not require mowing or watering.

In spite of this new focus on sustainability, the health care sector generates tons of waste and spends billions of dollars managing that waste. The opportunity to reduce costs begins with a basic understanding of the waste streams in the facility: how and where waste is generated, how it is handled within the facility, who is responsible for it, and what are the treatment and disposal costs of each waste stream. Unless a facility is tracking this type of waste data, it is likely losing money because it can't identify and focus on the best greening opportunities. Waste and material tracking data provides powerful information to help prioritize waste minimization efforts.

Practice Greenhealth's Awards program has celebrated sustainability success since 2002. The Awards recognize the different players in the greening community (hospitals, clinics, manufacturers, GPOs, A&E firms, etc…). One of the Awards that hospitals may apply for, the Partner for Change Award (described in more detail in Section 2), requires waste data reporting, as well as other criteria. This report summarizes this waste data and various sustainable activities provided by the 2009 Partner for Change Award

winners and present a snapshot of what types of greening activities American hospitals are implementing today.

2. THE DATA SET

The following analyses have been done using data provided by the sixty 2009 Partner for Change (PFC) Award winners, which include health care facilities of all types and sizes located across the country. In 2009, PFC Award winning facilities ranged in size from 17 to 1168 licensed beds, with an average of 334 beds per facility**.** The PFC Award is quite broad in scope, and recognizes facilities that include a diverse set of greening accomplishments (some just meet the minimum requirements while others have well established environmental and sustainability programs). Numerous facilities have won the PFC Award many consecutive years.

The minimum requirements for the PFC Award include that the facility must: be a current member of Practice Greenhealth, recycle ten percent or more of their total waste stream, have begun to eliminate mercury, and have implemented a number of successful pollution prevention or waste reduction projects.

Therefore, the data presented herein may be a cut above an "average" American hospital's waste/materials profile and environmental performance because these facilities are aware enough to be members of PGH and have progressed in their environmental programs sufficiently to qualify for the PFC Award. However, because there is such a broad range within the environmental performance of PFC Award winners, the data presents a relatively good snapshot of the greening of hospitals across America today.

Please note that the facilities who are just beginning their greening efforts (Partner Recognition Award winners), and those that are truly leading the industry in sustainability (Environmental Leadership Award winners) have not been included in this data set. The Environmental Leadership Award Winners Annual Reports were more narrative in format and difficult in tabulating, but Practice Greenhealth salutes the top Award winners for their leadership on sustainability initiatives.

Figure 1 illustrates the location of the sixty Partner for Change Award winning facilities represented in this data set. Approximately one third of the hospitals are located near the east coast (from Maine to Maryland), approximately a third is located in the Midwest, and approximately a third is located near the West Coast, primarily in California. One facility is located in Hawaii.

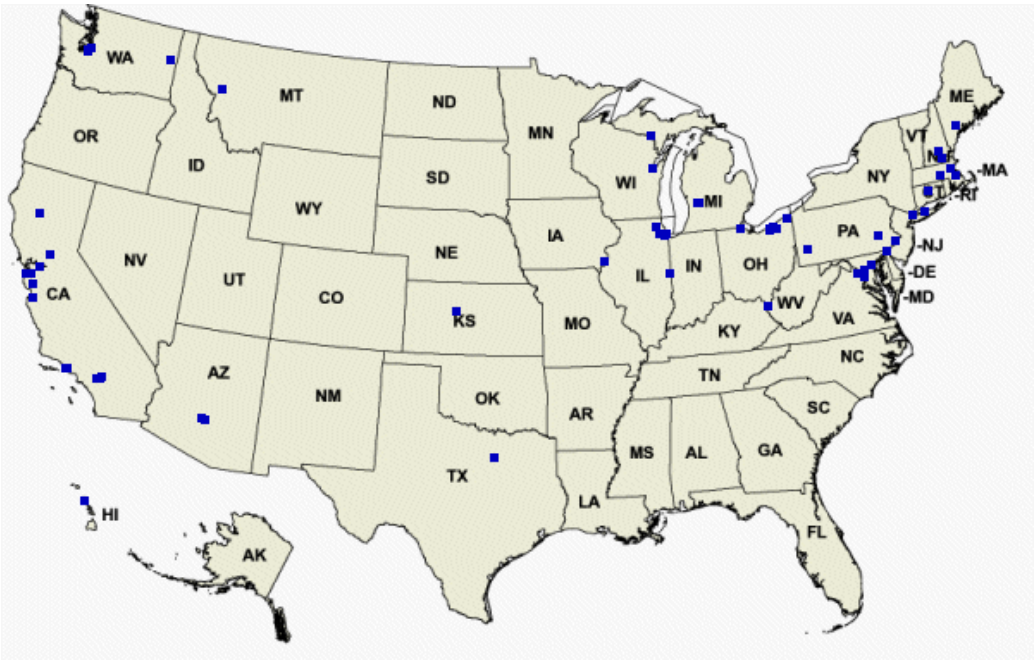


Figure 1. Map illustrating the distribution of the 60 PFC Award winning hospitals used in this report.

Who's who in Health care Sustainability.

The map above illustrates where the PFC Award winning hospitals are located, but who takes the lead on sustainability in health care within a hospital? Who is really doing this type of work? Table 1 below shows which departments within the sixty facilities are responsible for greening activities. For example, ten of the sixty Award winning applicants represented the Environmental Services department, ten represented the Facilities department, and nine represented Environmental Health and Safety.

Table 1 only shows the highest occurrences; the "other" department leads include:

Corporate Responsibility and Risk Management, the Director's Office, Education,

Environment of Care, Guest Services, Information Resource Management Services,

Neonatal Intensive Care, Office for a Healthy Environment, Organizational Learning and Performance, and Women's Health- with one occurrence in each of these departments.

Table 1: Who is leading the facility Green Teams?

Number applicants out of 60	Percent of applicants	Lead Department
10	17%	Environmental Services
10	17%	Facilities
9	15%	Environmental Health & Safety
7	12%	Materials Management
4	7%	Engineering
4	7%	Safety
4	7%	Administration
2	3%	Nutrition
10	17%	Other (see text above)

In addition, almost all of the Award winning hospitals had active Green Teams (97%) with participation from across the hospital; many of their member departments are listed in Table 1. It should be noted that nursing staff are critical to the success of environmental programs and they generally participate on the Green Teams, however typically they do not *lead* the team and thus are not represented on Table 1.

3. NORMALIZATION OF DATA

Data must be "normalized" in order to compare waste generation among facilities or even within a given facility over time. 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, and 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 implementation of a new waste minimization program, or if the hospital just a lot less busy than the year prior. And 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.

  Because there is no accounting for outpatient activity in either of these numbers, normalizing waste data using these factors alone tends to overestimate the amount of waste created per bed or per patient day for a typical hospital (see Table 2 below). We will not be using these numbers for normalization in this report.

- **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 (see Table 2 below). We will not be using these numbers for normalization in this 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 (see Table 2 below).

This report will use APD for normalization.

4.0 RESULTS

Table 2 below illustrates how much of each waste or material type the hospitals are generating. Each waste stream is presented as an average percentage of a facility's total waste stream, so 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).

For example, on average, 68% of the PFC Award winners' *total* waste stream was solid waste, ranging from a low of 46% to a high of 87%. And, on average, 24% of their total waste stream was recycled or prevented, 8% was regulated medical waste (RMW), and less than 1% was hazardous waste. Please note that virtually all hospitals generate *some* hazardous waste.

Table 2: Waste generation by type of waste steam

Waste Type	Average of Total Waste Stream	Low value	High value
Solid Waste	**68%**	46%	87%
Recycling	**24%**	10%	52%
Regulated Medical Waste	**8%**	1%	27%
Hazardous Waste	**<1%** (0.46)	<1% (0.01)	2% (1.9)

Notes for Table 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. These numbers will be better defined in the 2010 Award applications.

The **recycling** numbers include prevented or avoided waste;

The **hazardous** waste percentages were all reported as less than 2 percent of total waste stream and generally less than 1 percent, but this number should not be zero. Too little hazardous waste generation is a red flag and points to improper sewering or otherwise improper disposal of hazardous material. However, it could also demonstrate that laboratories are off-site and as a result, less on-site hazardous waste generation. Those facilities that are managing hazardous pharmaceuticals appropriately will see higher generation rates of hazardous waste. Regulations do vary state to state, so some states may allow more materials to be removed as "universal waste", lowering hazardous waste generation rates. The amounts of waste generated in the various categories reflect the segregation practices for that site.

Normalized waste data

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 presents average annual solid waste data from 36 of the PFC winners that provided all four normalized factors shown in Table 3.

The amount of solid waste generated varies from 12.5 to 18.7 pounds per day, depending on which factor is used. Solid waste per APD is shown in red to highlight that the data presented in this report is normalized using APD.

Table 3: Average Solid Waste Generation

Normalization factor	Average solid waste generation
Solid Waste / Outpatient day	12.5 pounds
Solid Waste / Adjusted Patient Day (APD)	**15.5 pounds**
Solid Waste / Licensed bed/day	16.6 pounds
Solid Waste / Staffed bed/day	18.7 pounds

Similarly, if you take the half dozen facilities that provided both APD and patient day numbers, the average solid waste generation looks like this: 15.2# solid waste/APD vs. 27.0 # solid waste/ patient day.

The average generation of each waste type (in pounds) and the low and high value for the data range are presented in Table 4. On average, the PFC Award winners generated 16 pounds of solid waste per APD, recycled or prevented 6 pounds of waste per APD, generated 2 pounds of regulated medical waste (RMW) per APD and generated less

than a pound of hazardous waste per APD. Please note that it is important to make sure that everyone is using the same formula to calculate APD.

Table 4: Waste generation normalized by Adjusted Patient Day

Waste Type	Average Pounds Per APD	Low value	High value
Solid Waste	16	4	39
Recycling	6	1	16
RMW	2	0.3	6
Hazardous Waste	<1 (0.14)	<1 (0.003)	2 (1.95)

So how have these facilities developed their environmental programs and reduced their waste generation and utility use? What projects and techniques have helped them to be successful? What cutting edge sustainability projects are being implemented? How are they demonstrating community benefit? How do they create a culture of environmental excellence? The next section provides an in depth look at answers to these questions. After years of working in and with health care facilities across the country, small, large, urban and rural, one thing is clear; there are critical ingredients to success in not only implementing new programs, but maintaining existing ones. To continuously build upon programs and transition from departmental or grass roots programming, to cohesive and well organized activities, the facility needs to create a culture of environmental excellence. Critical ingredients include: leadership support, a firm foundation and reporting structure to greening activities, access to technical guidance, clear communication/education and employee engagement strategies.

General Sustainability Infrastructure

An increasing number of hospitals are formalizing their commitment to environmental programs and providing resources to help incorporate sustainability into their standard operating procedures. However, most facilities continuously require a clear return on investment before embarking on environmental initiatives and are challenged when eco activities do not reduce costs. When outcomes are harder to quantify (waste removal fee reduction, for example) the program may become stalled.

One message strongly suggested from the PFC applications is 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-seven percent of the PFC 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.

Sustainability has recently come onto the radar screen of many top health care executives. In fact, 78% of the sixty PFC Award winning facilities indicated that they have a designated sustainability officer (33%) or someone on staff that is responsible for sustainability within their job description (45%). Table 5 and the remaining tables below present information regarding the waste infrastructure at the 60 PFC Award winning facilities. Table 5 can be read as: 58 of the 60 PFC Award winning facilities (equal to 97%) reported having a green team; 49 of the 60 facilities, or 82%, reported having a waste management plan, and so forth.

TABLE 5: SUSTAINABILITY INFRASTRUCTURE

Of 60 PFC facilities	Percent of the 60 facilities	These facilities reported that they:
58	97%	Have a "Green Team"!
49	82%	Have a waste management plan
49	82%	Provide staff training on sustainability
47	78%	Have an environmental commitment statement
47	78%*	Have a designated sustainability officer *or* someone who is responsible for sustainability
43	72%	Have an environmental management plan or policy that guides their program
39	65%	Provide staff trainings that cover pollution prevention and/or toxicity
31	52%	Track their environmental improvement initiatives in the Joint Commission structure
27	45%	Have someone on staff who is responsible for sustainability within their job description (but not by title)
20	33%	Have a designated sustainability officer

*To clarify: 78% have someone on staff who is charged with leading the sustainability effort. 78% = 45% have someone who is responsible by job description (but not by title) + 33% have a designated sustainability officer.

Regulated Medical Waste Reduction

Hospitals are saving significant amounts of money through RMW reduction programs through education and improved segregation practices. RMW is generally defined as materials that are soaked or saturated with blood, but often solid waste is also tossed into the red bag containers. Forty-nine of our PFC Award winners, or 82%, have implemented RMW reduction programs. To further reduce RMW costs, hospitals are increasingly including programs including single use device reprocessing (68%), reusable

sharps container programs (57%), and fluid management in the OR (47%). Table 6 summarizes these results.

TABLE 6: REGULATED MEDICAL WASTE REDUCTION

Of 60 PFC facilities	Percent of the 60 facilities	These facilities reported that they:
49	82%	Have engaged in an RMW education and reduction program
41	68%	Use Single Use Device reprocessing
34	57%	Have implemented a Reusable Sharps container program
28	47%	Use a Fluid Management system in the OR

Hazardous Waste Minimization Programs

While hazardous waste is a hospital's smallest waste stream, it is the most expensive waste stream to manage and dispose. Typically this waste stream includes waste solvents, refrigerants, oils, spill cleanup residue, pesticides, labs packs and hazardous pharmaceuticals, to name a few. Table 7 presents some hazardous waste minimization activities designed to address these wastes at the sixty PFC Award winning hospitals; for example, 93% of the data set use some green cleaning techniques, while 65% reported that they have implemented some type of pharmaceutical waste management program. These programs typically identify which pharmaceuticals are hazardous waste, and may identify opportunities for waste reduction and associated savings. It should be noted that while only *some* pharmaceuticals are considered hazardous waste, best management practices include implementing policies for preventing, managing and reducing *all* pharmaceutical waste.

Mercury Elimination

Forty-seven of the 2009 PFC Award winners (78%) have won Practice Greenhealth's Making Medicine Mercury Free Award. This means that they have eliminated mercury throughout their facilities, have documented these efforts, and have implemented policies to ensure that the mercury stays out of their facility.

TABLE 7: HAZARDOUS WASTE MINIMIZATION

Of 60 PFC facilities	Percentage of the 60 facilities	These facilities reported that they:
56	93%	Use some green cleaning techniques
47	78%	Have won the Making Medicine Mercury Free Award
43	72%	Have eliminated or reduced the use of ethylene oxide (EtO) for sterilization
41	68%	Have eliminated or reduced the use of glutaraldehyde for disinfection/ sterilization
40	67%	Indicated they were using integrated pest management-IPM*
39	65%	Have implemented a pharmaceutical waste management program; of these 39 facilities, 30 hired an outside vendor to help set up their program
31	52%	Are distilling solvents or other chemicals from the lab, typically alcohols and xylene, and occasionally formalin
23	38%	Have other chemical waste minimization programs in place

*IPM was not defined in the application, so the results may be a bit high, because some of the applicants indicated they are implementing IPM when it was not clear if they are really doing IPM which uses "chemical warfare" only as a last resort. We hope to clarify this on the 2010 PFC Award application.

Environmentally Preferable Purchasing

In the last few years, Environmentally Preferable Purchasing (EPP) programs in health care have matured from simply "what percentage of recycled content is in our copy paper?" to a much broader awareness of environmental considerations for all types of purchases made throughout the hospital. These considerations may include more advanced concepts, such as total life cycle analysis, that take into consideration environmental considerations for the manufacturing, use, recycling, and final disposal of the item. Table 8 illustrates that 46 of the reporting facilities (77%) indicated that

their product evaluation committee considers environmental impacts in its selection process.

TABLE 8: ENVIRONMENTALLY PREFERABLE PURCHASING: General

Of 60 PFC facilities	Percentage of the 60 facilities	These facilities reported that:
46	77%	Their product evaluation committee considers environmental impacts in its selection process
45	75%	They have switched some disposable products to reusable*
41	68%	They have Environmentally Preferable Purchasing (EPP) policies

*Examples of disposable items replaced with reusable items includes: reusable sharps containers and single use devices, linens and linen bags, gowns, uniforms, scrubs, reusable plastic totes, reusable patient information booklets, pharmacy waste containers, bio-waste tubs, and rigid sterile containers for surgical instruments and items.

EPP in the Kitchen:

Recently EPP has spread to hospital kitchens where sustainability has become a hot topic. Seventy-eight percent of the data set indicated that they have implemented innovative healthy food programs and 73% reported that they are working with their group purchasing organizations (GPOs) on EPP initiatives. In addition, over half the PFC winners have signed the Health Care without Harm Healthy Food Pledge (http://www.noharm.org/europe/issues/food/pledge.php).

Hospitals are working to make their patients, staff and visitors healthier, by offering healthier cafeteria and patient menu options and better choices in vending machines. Some are eliminating fried foods and Trans fats, reducing total fat and portion sizes, and promoting foods with whole grain, less salt and fewer artificial ingredients. Many offer Fair Trade Coffee while a few reported making better use of leftovers by creating soups, or using careful cooling techniques and donating the food to shelters or soup kitchens.

A number of hospitals are working to establish relationships with local farmers and can offer seasonable menus with healthier food options while avoiding transporting the raw ingredients long distances because of those relationships. These hospitals reported offering: organic and/or locally grown produce and meats, free range meat and eggs,

artificial hormone-free milk and eggs, or locally purchased baked goods. A few facilities have extended their offerings into the community by hosting farmers markets, building community gardens, or offering healthy cooking classes.

In addition, many hospitals are no longer offering bottled water at meetings, and have replaced that option with pitchers and glasses; many are handing out reusable coffee or travel mugs. While 60% of the data set have reduced their use of Styrofoam products in food services and are using paper or biodegradable products (including products made from sugarcane, corn and bamboo) only 25% were able to completely eliminate Styrofoam. Table 9 summarizes EPP projects for the data set:

TABLE 9: ENVIRONMENTALLY PREFERABLE PURCHASING: Food

Of 60 PFC facilities	Percentage of the 60 facilities	These facilities reported that they:
47	78%	Have implemented additional innovative healthy food programs beyond what was listed on the application, including projects such as healthier food options, fair trade coffee, and locally sourced foods
45	75%	Are still using some Styrofoam products
44	73%	Are working with their GPO on an EPP initiative
36	60%	Are using some paper or biodegradable products
32	53%	Have switched some disposable food service items to reusable items
6	10%	Have begun composting

Facilities and Construction:

Hospitals spend over $8 billion each year on energy. Not surprisingly, energy reduction is a hot topic at hospitals these days. From incorporating Green Guide for Health Care or LEED initiatives into building activities to looking at alternative energy sources, hospitals are making huge strides in green building and renovation. In fact, 97% of our PFC winners reported engaging in energy efficiency activities in 2009. Table 10 presents an overview of energy efficiency activities that Facilities departments are undertaking. The most common energy efficiency projects reported included lighting upgrades and installation of variable speed drives.

TABLE 10: FACILITIES AND CONSTRUCTION

Of 60 PFC facilities	Percentage of the 60 facilities	These facilities reported that they:
58	97%	Have engaged in energy efficiency activities
48	80%	Have engaged in water conservation activities
43	72%	Have taken some measures to integrate Green Building standards or specifications into their construction and renovation projects
36	60%	Are currently planning new building projects
31	52%	Are considering Green Guide for Health Care, LEED, or other certification
23	38%	Are Energy Star Partners
5	8%	Are participating in the E2C Program (between ASHE and Energy Star)

LIGHTING UPGRADES

One of the most popular energy conservation measures reported included various types of lighting upgrades, including installing electronic ballasts, switching to compact fluorescent and LED lighting, and installing occupancy or motion sensors. One facility even reported reducing Christmas lighting for a savings of over $10,000. Some facilities addressed lighting in their parking structures and others implemented simple but smart projects to reduce energy use such as installing window shades in hot climates or increasing the use of natural lighting in cooler climates.

VARIABLE SPEED DRIVES

Other big gains can be realized from addressing a facility's heating, venting and air conditioning (HVAC) system. The most popular project cited to conserve energy was the installation of variable speed drives on different types of motors in a facility's HVAC system. Table 11 presents other energy conservation projects reported by the 60 PFC Award winners.

TABLE 11: ADDITIONAL ENERGY CONSERVATION PROJECTS

HVAC energy conservation projects
Performed lighting upgrades
Installed variable speed drives
Installed energy efficient HVAC equipment, including energy efficient cooling towers
Installed a building automation system
Shut the HVAC system down at night in certain areas
Installed new damper controls for all air handling systems
Employed an ice bank cooling system that uses electricity only at night- to reduce faulting on peak rates
Used electronic programmable thermostats
Installed an energy management system that includes a computer controlled economizer mode which uses outside air to cool the facility instead of using the chillers
Replaced building roofs with reflective roofing materials
Boilers:
Installed low emission boilers that boast 50% reduction in emissions
Switched the fuel oil reserve from #6 Diesel Oil to #2 Diesel which eliminated the need to continually heat and pump fuel as it is stored
Installed a natural gas draft reduction device in the boiler exhaust stack which should provide a 5% reduction in fuel usage from the boiler
Completed upgrades to two boilers including new burner housings and level controllers
Installed “summer boilers” which will allow the winter boilers to be to shut off during the summer months creating cost savings from higher efficiencies and reducing potential damage to winter boilers

Recycling:

The 2009 PFC Award winners recycled an average of almost a quarter of their total waste stream, or about 1.2 tons of material per licensed bed, annually (with values ranging from 0.2 to 7.3 tons of material per bed annually). Table 12 presents the "Top 10" most commonly recycled materials and reads: all 60 facilities (100%) recycle fluorescent lamps; 55 of the 60 facilities, (92%) recycle cardboard, and so on…

Table 12: Top Ten Most Commonly Recycled Materials

Material recycled	Of 60 facilities	% of facilities
Fluorescent lamps*	60	100%
Cardboard	55	92%
Batteries*	54	90%
Computers /Electronics*	49	82%
Toner cartridges	49	82%
Oil (cooking, motor)	47	78%
Paper, white	47	78%
Paper, mixed	45	75%
Pallets	42	70%
Equipment Donation	42	70%

*Fluorescent lamps, batteries, and E-waste are all considered to be Universal Wastes.

Seventy percent of the PFC Award winning hospitals are donating used equipment and many other types of materials to a number of different types of organizations. Pallets full of medical equipment, furniture, linens, books and supplies are donated regularly to organizations that distribute the materials to third world countries; avoiding a premature trip to the local landfill and benefiting those in need. Electronic equipment is being handled as Universal Waste, where appropriate, and is being recycled and redeployed by 82% of the data set. One hospital even uses online resources to invite people to remove obsolete furniture that their charity did not want to send overseas.

Table 13 and 14 present a more complete list of items hospitals are recycling; Table 13 is organized by alphabetical order of each material recycled, while Table 14 is organized from the highest to lowest occurrence of each recycled material.

RECYCLED MATERIALS

Table 13 is organized by alphabetical order of the type of material being recycled and reads: 39 of the 60 reporting facilities (or 65%) recycle aluminum.

TABLE 13: RECYCLED MATERIALS SORTED ALPHABETICALLY

Material recycled	Of 60 facilities	% of facilities
Aluminum cans	39	65%
Batteries	54	90%
Blue Wrap	7	12%
Boxboard	12	20%
Cardboard	55	92%
Computers /Electronics	49	82%
Equipment Donation	42	70%
Fluorescent lamps	All	100%
Foam peanuts	17	28%
Food donation	20	33%
Food waste (composting)	10	17%
Glass, mixed	16	27%
Ice packs / coolers	13	22%
Ink jet cartridges	30	50%
Landscape (composting)	17	28%
Linens (reused for rags only)	28	47%
Newspaper	35	58%
Oil (cooking, motor)	47	78%

Pallets	42	70%
Paper, mixed	45	75%
Paper, white	47	78%
Plastic, #1PET	24	40%
Plastic, #2 HDPE	24	40%
Plastic, #5 polypropylene	16	27%
Plastic, #6 PS	17	28%
Plastic, mixed	34	57%
Shrink wrap	13	22%
Solvent distillation	23	38%
Steel cans	28	47%
Toner cartridges	49	82%
Wood	10	17%
X-ray film	22	37%

It should be noted that the plastic recycling data will be addressed a little more clearly in the 2010 applications. In this data, 34 applicants indicated their plastics were co-mingled, but 21 of those also listed some of the individual plastics by type, and are counted in those numbers as well. This may skew the numbers a bit, since some were reported in duplicate.

In Table 14, the same information is presented but is shown sorted from the highest to lowest occurrence among the 60 PFC Award winning facilities. This table reads: all 60 facilities (100%) recycle fluorescent lamps; 55 of the 60 facilities, equal to 92%, recycle cardboard, and so on…

TABLE 14: MATERIALS RECYCLED SORTED BY AMOUNT RECYCLED

Material recycled	Of 60 facilities	% of facilities
Fluorescent lamps	All	100%
Cardboard	55	92%
Batteries	54	90%
Computers /Electronics	49	82%
Toner cartridges	49	82%
Oil (cooking, motor)	47	78%
Paper, white	47	78%
Paper, mixed	45	75%
Pallets	42	70%
Equipment Donation	42	70%
Aluminum cans	39	65%
Newspaper	35	58%
Plastic, mixed	34	57%
Ink jet cartridges	30	50%
Steel cans	28	47%
Linens (reused for rags only)	28	47%
Plastic, #1PET	24	40%
Plastic, #2 HDPE	24	40%
Solvent distillation	23	38%
X-ray film	22	37%
Food donation	20	33%
Foam peanuts	17	28%
Landscape (composting)	17	28%

Plastic, #5 polypropylene	17	28%
Plastic, #6 PS	16	27%
Glass, mixed	16	27%
Shrink wrap	13	22%
Ice packs / coolers	13	22%
Boxboard	12	20%
Food waste (composting)	10	17%
Wood	10	17%
Blue Wrap	7	12%

Other Innovative Programs

Many PFC Award winners described additional innovative environmental programs at their facilities; particularly noteworthy are programs that address transportation issues in urban areas and projects that benefit the local community.

Transportation:

A number of PFC Award winners are addressing transportation challenges by encouraging their employees to walk, bike, carpool, or take public transportation to work. Hospitals are installing bike racks, offering carpool and shuttle services, subsidizing monthly public transportation passes and offering other creative incentives. For example:

Innovative transportation activities:
Providing special covered parking for car-pool vehicles and providing a financial rebate to those who car-pool, ride bikes or use public transportation
Operating a bus shuttle between our two main facilities for staff and patients (implemented because many staff work at both locations and patients may require multiple services at both locations)
Encouraging the use of teleconferencing for meetings and carpooling to offsite classes/meetings when necessary
Creating an agreement with the local transit authority to create a dedicated direct bus route that connects the campus with the train station.

One California hospital's extensive transportation program sums it up:

"We have a program that offers a variety of incentives to employees who use commuting alternatives to travel to work. Carpoolers receive free parking, designated parking spaces near the entrance, and a monthly gas card or free lunch tickets. Employees who bike to work receive individual bike lockers or space in a secured bike cage, shower facilities, and free lunches. Walkers also have access to shower facilities, and a free lunch. We offer 100% subsidies to employees who take public transportation and reimburse our vanpoolers $85.00 per month toward their lease. Our community shuttles are operated on propane, which is a cleaner burning fuel than diesel or gasoline."

Community programs:

In addition, hospitals are joining local conservation and energy programs: one facility reported contributing to a special fund at their local electric supplier which funds sustainable energy projects for smaller businesses in the area while another facility partners with the state retarded citizens organization to provide daily labor to collect the recycling containers throughout the facility.

5.0 CONCLUSIONS

The data presented above illustrates the types of activities that define green health care today and shows the incremental strides hospitals are making down the path of sustainability. This report provides a snapshot in time of what sustainability in health care looks like today, appreciating that this picture will change over time and that certainly not every activity is captured in this brief report. The report also presents data on how much waste and materials hospitals are generating. While much of the health care industry is just getting started with data collection and reporting, others have been collecting detailed materials and waste data for years and are using this information to target areas for improvement, further their sustainability programs, and save significant amounts of money. Those facilities that are beginning to plot their course can use this benchmark report to help guide their journey. This data provides powerful information

to identify priorities, benchmark activities and steer the sustainability course. As noted above, these benchmarks will continue to change as individual facilities progress along the path of sustainability.

As hospitals continue to demand greener products, the market will shift to offer more environmentally preferable products and services. Manufacturers and Group Purchasing Organizations have already begun a shift to offer greener products, and the health care industry will continue to push for even more options. Manufacturers, service providers, and other forward thinking businesses can see the direction that hospitals are heading and can contribute through partnerships and leadership by offering responsible products and services. Practice Greenhealth will continue to modify the Award applications in an effort to increase the amount of benchmark data that can be captured and promises to expand reporting on sustainability, including energy and water conservation, green building, community benefit reporting, and other truly innovative activities. Through expanded reporting, Practice Greenhealth will break down sustainability into the ingredients for success including strategic planning, leadership support, communication strategies, community benefit, reporting, recognition, research and innovation, partnering and education. Facilities are asking for help in prioritizing strategies and identifying those activities that will have the biggest impact.

Because the Practice Greenhealth Partner for Change Applications provides such excellent data, Practice Greenhealth can share valuable information regarding the health care sector's approach to sustainability and illustrate what specific projects contribute to sustainability.

Practice Greenhealth would like to thank the following 2009 PFC Award winners for their efforts in filling out the PFC Award application and for the use of their aggregate data in the preparation of this report. Practice Greenhealth applauds the time, effort and dedication these leaders in sustainability have taken to implement such exemplary and innovative programs to green their facilities.

	Organization Name	**City:**	**State:**
1	Advocate Christ Medical Center and Hope Children's Hospital	Oak Lawn	Il
2	Advocate Good Samaritan Hospital	Downers Grove	IL
3	Advocate Good Shepherd Hospital	Barrington	IL
4	Arlington Memorial Hospital- Texas Health	Arlington	Texas

5	Ashtabula County Medical Center	Ashtabula	Ohio
6	Bay Park Community Hospital	Oregon	OH
7	Cancer Treatment Centers of America at Eastern Regional Medical Center	Philadelphia	PA
8	Chandler Regional Medical Center	Chandler	AZ
9	Christiana Hospital	Newark	DE
10	Cleveland Clinic	Cleveland	OH
11	Community Hospital of San Bernardino	San Bernardino	CA
12	Concord Hospital	Concord	NH
13	Connecticut Children's Medical Center	Hartford	CT
14	Elliot Hospital	Manchester	NH
15	Fairview Hospital - A Cleveland Clinic Hospital	Cleveland	OH
16	Great River Medical Center	West Burlington	IA
17	Hays Medical Center, Inc.	Hays	KS
18	Hillcrest Hospital	Mayfield Heights	OH
19	Huntington VA Medical Center	Huntington	VA
20	Huron Hospital, A Cleveland Clinic Hospital	East Cleveland	OH
21	Inova Fairfax Hospital	Falls Church	VA
22	Kaiser Permanente Antioch Medical Center	ANTIOCH	CA
23	Kaiser Permanente Fontana Medical Center	Fontana	Ca
24	Kaiser Permanente Fremont Medical Center	Fremont	CA
25	Kaiser Permanente Hawaii Region	Honolulu	HI
26	Kaiser Permanente Hayward Medical Center	Hayward	CA
27	Kaiser Permanente Health Plan of Ohio	Cleveland	OH
28	Kaiser Permanente Health Plan of the Mid-Atlantic States	Rockville	MD
29	Lakewood Hospital	Lakewood	OH
30	Magee-Womens Hospital of the University of Pittsburgh Medical Center	Pittsburgh	PA

31	Mercy General Hospital	Sacramento	CA
32	Mercy Gilbert Medical Center	Gilbert	AZ
33	Mills Peninsula Health Services, A Sutter Health Affiliate	Burlingame	CA
34	Montgomery General Hospital (MGH)	Olney	MD
35	Nova Medical Group	Ashburn	VA
36	Oscar G. Johnson Veterans Affairs Medical Center	Iron Mountain	MI
37	Saint Francis Hospital and Medical Center	Hartford	CT
38	Salinas Valley Memorial Health care System	Salinas	CA
39	Spectrum Health Blodgett Hospital	Grand Rapids	MI
40	Spectrum Health Butterworth Hospital	Grand Rapids	MI
41	Spokane Veterans Administration Medical Center	Spokane	WA
42	St. Bernardine Medical Center	San Bernardino	Ca.
43	St. Clare Hospital	Lakewood	WA
44	St. Elizabeth Community Hospital	Red Bluff	CA
45	St. Francis Hospital	Federal Way	WA
46	St. John's Pleasant Valley Hospital	Camarillo	CA
47	St. John's Regional Medical Center	Oxnard	CA
48	St. John's Riverside Hospital	Yonkers	NY
49	St. Joseph Manor	Brockton	MA.
50	St. Joseph Medical Center	Tacoma	WA
51	St. Joseph Regional Health Network	Reading	PA
52	St. Mary Health Care Center	Worcester	MA
53	St. Mary's Health System	Lewiston	ME
54	St. Patrick Hospital and Health Sciences Center	Missoula	MT
55	St. Vincent Hospital	Green Bay	WI
56	Stony Brook University Hospital	Stony Brook	NY

57	The University of Chicago Medical Center	Chicago	IL
58	VA Illiana Health Care System	Danville	IL
59	VA Maryland Health Care System	Baltimore	MD
60	Youville Hospital & Rehabilitation Center	Cambridge	MA

While this report focuses on Practice Greenhealth's Partner for Change Award winners, it should be noted that the Environmental Leadership Award recognizes the top performing member facilities. The Environmental Leadership Award winners are recycling at least 25% of their total waste stream, are virtually mercury free, and have demonstrated leadership in both sustainability and in their communities. An effort will be made to revise the Environmental Leadership Award format in 2010 to provide more accessible data for the next version of this report. Practice Greenhealth would like to acknowledge the following Environmental Leadership Award winners for their commitment to health and sustainability and for breaking this path for others to follow:

Environmental Leadership Circle

2009 Inductees

Fletcher Allen Health Care – Burlington, VT
Metro Health Hospital – Wyoming, MI

Sustained Winners

Affinity Health System – Appleton, WI
Allegiance Health – Jackson, MI
Borgess Medical Center – Kalamazoo, MI
Bronson Methodist Hospital – Kalamazoo, MI
Dartmouth-Hitchcock Medical Center – Lebanon, NH
Dominican Hospital – Santa Cruz, CA
Gundersen Lutheran – La Crosse, WI
Legacy Emanuel Hospital and Medical Center – Portland, OR
Legacy Good Samaritan Hospital and Medical Center – Portland, OR
Legacy Meridian Park Hospital and Medical Center – Tualatin, OR
Legacy Mount Hood Hospital and Medical Center – Portland, OR
Legacy Salmon Creek Hospital and Medical Center – Vancouver, WA
Mercy Hospital – Janesville, WI
Northern Michigan Regional Hospital – Petoskey, MI
Oregon Health and Science University – Portland, OR
Providence Milwaukie Hospital – Milwaukie, OR
Providence Portland Medical Center – Portland, OR
Providence St. Vincent Medical Center – Portland, OR
Ridgeview Medical Center – Waconia, MN
Sacred Heart Hospital – Eau Claire, WI
Sequoia Hospital – Redwood City, CA
St. Joseph's Medical Center – Stockton, CA

PRACTICE Greenhealth

St. Mary's Hospital Medical Center – Green Bay, WI
Texas Health Harris Methodist Hospital – Fort Worth, TX
University Health Network – Toronto, ON
University of Michigan Hospitals and Health Centers – Ann Arbor, MI
University of Texas Health Science Center – San Antonio, TX
University of Washington Medical Center – Seattle, WA

DISCLAIMER: This report is based on self reported data as provided by Practice Greenhealth 2009 Partner for Change Award applicants and has been compiled in aggregate 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.

PRACTICE
Greenhealth

2009 Practice Greenhealth Awards Coordinator

Practice Greenhealth Hospitals:

Supplemental Data on Environmental Practices 2009

As a supplement to the 2009 Awards Benchmark Report

Practice Greenhealth makes available to its members data about Practice Greenhealth Hospitals from two different sources.

November 2008 Survey

Practice Greenhealth surveyed hospitals in late 2008 using a web-based survey. Fifty-nine facilities, 13% of our membership at that time, responded to the survey. These facilities are self-selected; their common characteristic is that they prioritized the time to answer our survey.

2009 Partner for Change Award Applications

A group of Practice Greenhealth facilities apply for the Partner for Change award each year, and as a result answer many questions related to environmental practices. These facilities are self-selected; their common characteristic is that they feel they have made sufficient progress to apply for an award.

Certain data from the Award Applicants are included here if it was not included in the Awards Benchmark Report or if it is useful to have it here to compare with data from the Survey. See the Awards Benchmark Report for more comprehensive information.

What questions do these data address?

The questions addressed in this supplement cover a broad variety of environmental practices, including:

- Specific environmentally preferable products
- Materials and chemicals facilities have targeted for reduction in use
- Renewable energy technologies and practices
- Water conservation practices

I. Background Information and Basic Hospital Statistics

Number of Facilities

Both the 2008 Survey and the 2009 Partner for Change (PFC) Award Applications have data from about the same number of facilities, 59 and 60, respectively. All these are Practice Greenhealth Member Hospitals.

Differences from Awards Benchmark Report

The Award data included in this document are different from the data in the 2009 Awards Benchmark Report because they are from slightly different samples. These data include all Partner for Change Award Applicants, including those who were *not* awarded the Partner for Change Award.

The Awards Benchmark report includes only those who *won* the Partner for Change Award. In addition, some PFC Award Applicants submitted their application in a non-standard format. Their data was included in the Awards Benchmark Report, but not here.

Notes on Statistics

Not all facilities answered every question. For Yes/No questions, this supplement shows the number or percentage of facilities answering "yes" to this question, without differentiating those that answered "No" from those that left the question blank. For questions that allow answers other than Yes or No, this supplement shows the percentage giving a certain answer out of those facilities that actually answered the question.

Facility Size

The number of licensed beds of facilities for both the Survey and Award Application data were fairly similar.

Number of Licensed Beds	Award Applicants		Survey Respondents	
0-50	3	(6%)	5	(8%)
51-100	3	(6%)	2	(3%)
101-200	10	(20%)	17	(29%)
201-300	13	(25%)	17	(29%)
301-600	18	(35%)	14	(24%)
>600	4	(8%)	4	(7%)
Totals	51		59	

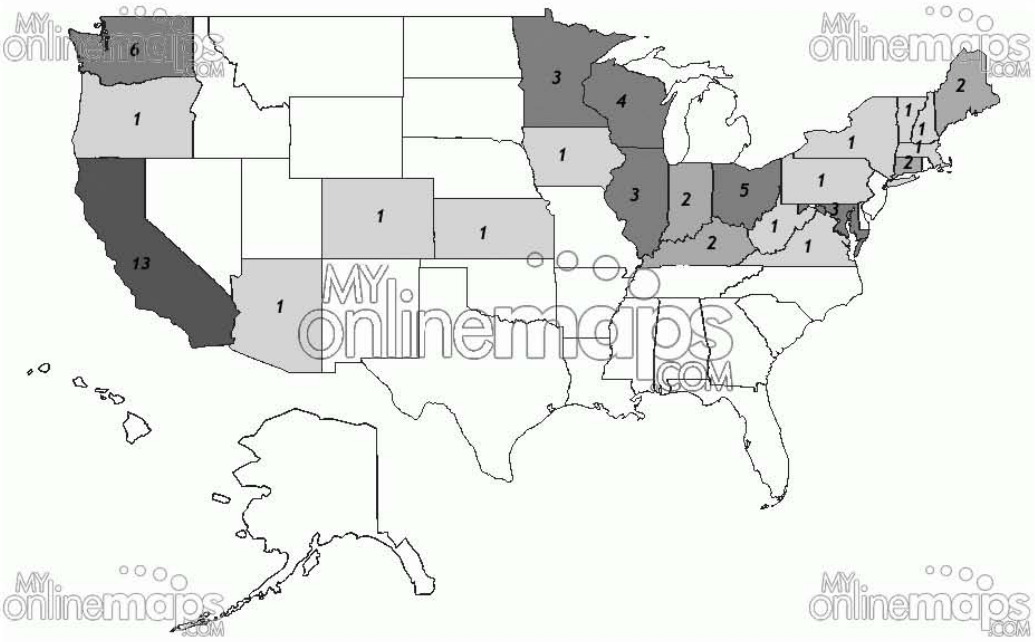
Facility Type

Only Survey respondents answered questions about facility type.

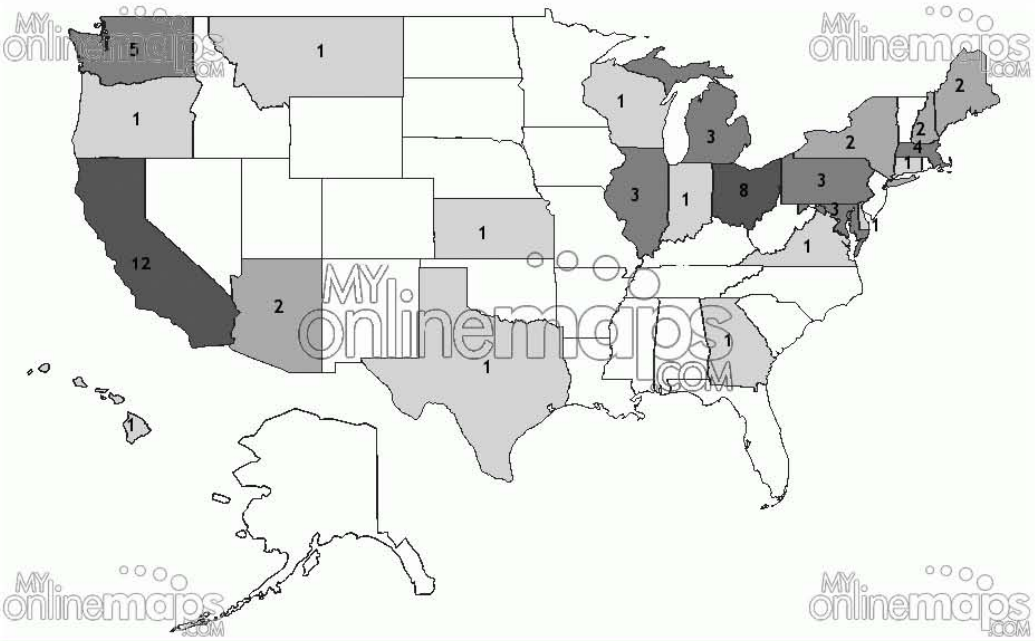
Type	Survey Respondents
Nonprofit	46
For-profit	1
Government	13
Academic	2
Community	2

Location of Facilities Responding to 2008 Survey

Two responding facilities in Ontario, Canada are not included in this map



Location of Facilities Submitting 2009 Partner for Change Award Applications



Environmental Purchasing

Most Survey Respondents have or are implementing a program, and are focusing on certain materials

90% of Award Applicants have Clinicians involved in environmental programs

47% of Survey Respondents have implemented an Environmentally Preferable Purchasing Program

44% of Survey Respondents are currently implementing an Environmentally Preferable Purchasing Program

Environmental Purchasing: Budget

Only one facility responding to the Survey could list the percentage of their budget devoted to environmentally preferable products: 1%. That same facility reported that it is buying 45 environmentally preferred products.

Another facility reported in the Survey they spend $62,500 per year on environmentally preferred products. No other surveyed facility could answer these questions.

Specific Products and Environmental Labels

54% of Survey Respondents use Reprocessed Single-Use Medical Devices

59% of Survey Respondents use Remanufactured Toner Cartridges

51% of Survey Respondents use Green Seal Cleaners (www.greenseal.org) or Canadian EcoLabel Cleaners (www.ecologo.org)

15% of Survey Respondents use EPEAT Computers (www.epeat.org)

66% of Survey Respondents use Recycled-Content Copy Paper

53% of Survey Respondents use other Recycled-Content Office Papers

59% of Survey Respondents use Energy Star products (www.energystar.gov)

44% of Survey Respondents use Reusable Textiles (i.e. reusable gowns, surgical drapes, etc.)

Many Facilities Focusing on Specific Materials

88% have a program to reduce Mercury

37% have a program to reduce Polyvinyl Chloride Plastic (PVC) and DEHP

19% have a program to reduce Brominated Flame Retardants

61% have a program to reduce Cleaning Chemicals and Disinfectants

41% have a program to reduce Pesticides

53% have a program to reduce Lab Chemicals

54% have a program to reduce Construction Project-Related Materials

Energy-Efficiency Efforts and Renewable Energy

93% Of Survey Respondents have made efforts to Improve Energy Efficiency

59% of Survey Respondents use Energy Star products (www.energystar.gov)

12% of Survey Respondents Generate their own energy On-Site

5% of Survey Respondents use Solar Energy

2% of Survey Respondents use Fuel Cells

5% of Survey Respondents use Co-Generation

Energy Savings 15 facilities reported energy efficiency gains

	Gains
Average	13%
Minimum	3%
Maximum	33%
Median	10%

Energy-Efficient Practices and Activities

44% of Survey Respondents have done Lighting Retrofits

27% of Survey Respondents have Replaced Equipment

20% of Survey Respondents use Policies and Behavioral Programs to increase energy efficiency

17% of Survey Respondents use Motion Sensors

7% of Survey Respondents use Computer Controlled Lighting

5% of Survey Respondents use Variable Speed Drives

3% of Survey Respondents have done an Energy Audit

3% of Survey Respondents have done Retro-Commissioning

2% of Survey Respondents use Natural Light

2% of Survey Respondents use Building Insulation and Roofing

2% of Survey Respondents use Window Heating Controls

Water-Efficient Practices and Activities

29% of Survey Respondents have an established Water Conservation Program

20% of Survey Respondents are in the Planning Stages of a Water Conservation Program

Water Savings 8 facilities reported water efficiency gains

	Gains
Average	11%
Minimum	1%
Maximum	27%
Median	10%

Water-Efficient Practices and Activities Continued

14% of Survey Respondents use Low-Flow Toilets

8% of Survey Respondents use unspecified Low-Flow Fixtures

7% of Survey Respondents use Low-Flow Showerheads

5% of Survey Respondents use Water Capture and Reuse

3% of Survey Respondents use Water Conservation Landscaping

3% of Survey Respondents have replaced or retrofit Chillers, Compressors, or Cooling Systems

2% of Survey Respondents use Waterless Urinals

2% of Survey Respondents have improved Boiler Efficiency

2% of Survey Respondents use Water-Efficient Faucets

2% of Survey Respondents use Education to increase water efficiency

2% of Survey Respondents use Water-Efficient Autoclaves

2% of Survey Respondents use Computerized Irrigation

2% of Survey Respondents have reduced Landscape Watering

2% of Survey Respondents have reduced Power Washing of Exterior

2% of Survey Respondents have reduced Car Washing frequency in the motor pool

2% of Survey Respondents have done a Water Audit

2% of Survey Respondents use Microfiber Mops

2% of Survey Respondents use Water Efficient X-ray Equipment

1. Welcome

Welcome to the Practice Greenhealth Member Practices Survey. We really appreciate your taking the time to complete this survey. Please complete this survey by November 30. Please submit your survey whether or not you have been able to answer every question. We appreciate your assistance in gathering this important data.

2. Default Section

1. Please indicate your facility type. Check all that apply.

- [ ] Nonprofit
- [ ] For-profit
- [ ] Government
- [ ] Academic
- [ ] Community

2. If an in-patient facility, how many licensed beds?

○ 0-50 ○ 51-100 ○ 101-200 ○ 201-300 ○ 301-600 ○ 600+

3. In what state is your facility located?
If more than one state, please list all states.

4. Has your facility implemented a waste reduction plan?

○ Yes ○ No ○ In planning process

5. If yes, what percentage of your facility's waste has been reduced?

6. What percentage of your facility's waste is recycled?

7. Has your facility implemented a regulated medical waste reduction plan?

○ Yes ○ No ○ In planning process

8. If yes, what percentage of your facility's total waste stream is regulated medical waste?

9. Purchasing
Has your facility implemented an environmentally preferable purchasing program?

○ Yes ○ No ○ In planning process

10. If yes, how much of your facility's purchasing budget is dedicated to environmentally preferred purchasing? (This would include recycled content products, Green Seal cleaners, EPEAT computers, and other products with a documented environmental benefit.)

Percentage of total purchasing budget

Dollar amount per year

Number of individual environmentally preferred products purchased per year

11.

Which environmentally preferred products does your facility currently purchase: (check all that apply)

- ☐ Reprocessed Single-Use Medical Devices
- ☐ Remanufactured Toner Cartridges
- ☐ Green Seal Cleaners (www.greenseal.org) or Canadian EcoLabel Cleaners (www.ecologo.org)
- ☐ EPEAT Computers (www.epeat.org)
- ☐ Recycled content copy paper
- ☐ Other recycled content office papers
- ☐ Energy Star lab equipment, building products, or other Energy Star products (www.energystar.gov)
- ☐ Reusable Textiles (i.e. reusable gowns, surgical drapes, etc.)

12. Chemicals

Has your facility implemented a program to reduce or eliminate the use of hazardous chemicals and materials ?

○ Yes ○ No ○ In planning process

13. If yes, please check all that apply:

- ☐ Mercury
- ☐ PVC and DEHP
- ☐ Brominated flame retardants
- ☐ Cleaning Chemicals and Disinfectants
- ☐ Pesticides
- ☐ Lab Chemicals
- ☐ Construction Project-Related Materials

14. Has your facility developed a program to properly characterize and manage pharmaceutical waste?

◯ Yes ◯ No ◯ In process

15. Can you briefly describe the method you use to dispose of pharmaceutical waste?

16. Energy
Approximately what percentage, if any, of the energy your facility uses comes from renewable resources?

17. Does your facility generate any of its own renewable energy onsite?

◯ Yes ◯ No

18. If yes, what technology does your facility use?

19. Has your facility made efforts to improve energy efficiency?

◯ Yes ◯ No

20. If yes, what measures has your facility implemented to improve energy efficiency?

21. If yes, please list percentage energy reduction achieved.

22. Water
Has your facility established a water conservation program?

◯ Yes ◯ No ◯ In planning process

23. If yes, what percentage reduction in water use has your facility achieved?

24. If yes, what type of conservation measures has your facility taken?

25. Building

Is your organization using either the Green Guide for Healthcare or the US Green Building Council's Leadership in Energy and Environmental Design (LEED)standard for any operation, renovation, design or construction project?

◯ Yes ◯ No

26. Other

Has your facility asked someone in your organization to take the lead on sustainability activities?

◯ Yes ◯ No ◯ In planning process

27. If yes, what is this person's title in your organization?

28. Is a training budget available for this staff member?

◯ Yes ◯ No ◯ Dont know

29. Please identify the training topics that you feel are most important in advancing your facility's sustainability efforts.

30. Has your organization created a green team or utilized an existing committee to assess and address environmental initiatives?

◯ Yes ◯ No

31. If not a "green team", what committee do you utilize?

32. What mechanisms does your facility use for obtaining news on health industry greening regulatory, legislative, and industry activities?

33. Has your facility saved money as a result of environmental or sustainability initiatives?

◯ Yes ◯ No ◯ Dont know

34. How much have you saved and what activities have contributed to that savings?

35. Please identify areas in which you might need consulting around sustainability.

- [ ] Environmental audit
- [ ] Green architecture and design
- [ ] Facilities Management
- [ ] Chemical Management
- [ ] Waste Management
- [ ] Environmental Services
- [ ] Food Service
- [ ] Environmentally Preferable Purchasing

36. If you would like information on consulting services, please enter your email below.