

## How Green is your Healthcare Organization?

Healthcare ranks among the largest users of energy, highest producers of waste and is a major consumer of paper, water, food, and other resources, resulting in an industry with a huge environmental footprint. In an effort to reduce the impact on the environment, healthcare organizations are asking for information on best practices, guidance in establishing green practices, and ways to measure success. This Eco-Checklist has been designed to provide a quick snapshot of where an organization sits on the green spectrum and highlights the range of environmental programs being implemented in healthcare. Whether your organization is just beginning its sustainability journey or is looking for ways to assess and measure progress, this tool was designed for you.

#### Measuring Environmental Awareness, Progress and Success

Achieving environmental sustainability or "green" in an organization is a long-term commitment, involving a culture shift that supports a new way of operating. Environmental sustainability is about taking responsibility for the by-products of healing and doing everything possible to demonstrate a commitment to a safe and healthy environment for patients, staff, the community and the planet. This Eco-Checklist is designed to help guide environmental initiatives by identifying programs to implement, suggesting potential goals and priorities, and tracking progress over time. It can also be used to educate the leadership to gain full support and resources for your environmental programs by providing valuable information on the full landscape of healthcare sustainable operations.

### **Using This Checklist**

The activities in the checklist are organized by program area and are not necessarily in hierarchal order, but rather are meant to highlight the range of environmental programs being implemented in healthcare facilities. The activities in the Eco-Checklist are abbreviated for ease of use, and are focused on operational strategies for environmental improvement. This document does not specifically address environmentally sound strategies for design, construction and major renovations. Additional information and background on each initiative is available in greater detail from both Practice Greenhealth and the Green Guide for Health Care. A brief glossary of acronyms and terms used in this checklist (denoted by an \*) is available in the appendix. Each organization will need to review the feasibility, available resources, local, state and federal regulations, and community-specific initiatives, as factors in selecting and prioritizing their programs. A key success factor will be the interest and availability of champions to lead each program. It is important to solicit input and gain commitment from key stakeholders and experts within the organization for each initiative, such as utilization of the Infection Prevention & Control, Safety, Risk Management and Clinical Practice committees to ensure appropriate input for decisions affecting clinical standards.

### **Additional Resources**

**Green Guide for Health Care** – The Eco-Checklist was adapted from the Version 2.2 of the *Green Guide for Health Care's Operations Section*, a self-certifying toolkit for greening healthcare operations. The program section titles and activities in the Eco-Checklist are similar to the *Green Guide*, although not identical. The *Green Guide* provides more comprehensive information on each program area and can be used as a valuable companion reference for additional information, including: rationale, health statements, measurement tools, technologies, and related regulations and reference standards. The *Green Guide for Health Care* can be found at www.gghc.org.

**Practice Greenhealth** – Additional information about the activities in the Eco-Checklist, such as sample policies, case studies, tools, resources and webinars, are available from Practice Greenhealth and can be found at **www.practicegreenhealth.org**. The *Green Guide* credits are also referenced on different pages across the website. Practice Greenhealth is a learning community for facilities and organizations to share successes, strategies and practical solutions to healthcare environmental challenges.

© Practice Greenhealth, 2009. This document was developed with support from the Premier Inc. healthcare alliance. Learn more about Premier's GreenHealthy™ initiative and commitment to environmental sustainability at www.premierinc.com/greenhealthy.



Practice Greenhealth Eco-Checklist<sup>™</sup> for Operations

Facility Name				
Contact Name Title				
Phone Email		Date		
	Fully In Place	In Progress	Aware of Program — But Not Yet Underway	Not Aware of Program — Need More Info to Evaluate
Environmental Stewardship Structure				
Establish organizational Environmental Mission Statement or overarching environmental policy including values and goals for greening construction and operations.				
Establish Green Team or "environmental committee" to design, implement and manage environmental sustainability initiatives.				
Develop Green Team identity (e.g., logo/branding) for facility's sustainability initiatives.				
Identify Sustainability Director or designate other specific individual or champion to lead environmental sustainability programs throughout organization.				
Seek sources of funding for green projects and incentive opportunities, (e.g., philanthropic resources).				
Education and Communication				
Utilize the Green Guide for Health Care's Operations Toolkit to comprehensively track environmental achievements in operations.				
Recognize environmental successes through participation in Practice Greenhealth Awards or other state/local recognition programs.				
Communicate recognition to staff and community.				
Develop a poster campaign, educational brochure and/or integrate information into patient orientation materials communicating organization's environmental goals and programs.				
Educate staff and management on organization's sustainability initiatives, their connection to human health, and their role in achieving sustainability goals as a component of new hire and annual training programs.				
Implement regular (e.g., quarterly) sustainability reporting to update senior management, staff and Board of Trustees.				
Report sustainability performance to community and/or IRS (for non-profit organizations) annually through an Annual Report and IRS Schedule H, Form 990*.				

	Fully In Place	In Progress	Aware of Program — But Not Yet Underway	Not Aware of Program — Need More Info to Evaluate
Environmentally Preferable Purchasing				
Develop list of targeted materials of concern (such as mercury, PVC*, DEHP*, BFRs*, urea formaldehyde, VOCs* or BPA*) for new product purchases.				
Formally integrate and utilize environmental criteria in organization's internal value analysis or product selection process.				
Develop a formal organizational policy to guide the selection and purchase of environmentally preferable products and services, including a preference for those that meet certain environmental criteria.				
Educate suppliers about organization's environmental purchasing goals and policy.				
Modify contract language to state preference for or requirement to avoid materials of concern or inclusion of other environmental criteria (e.g., recyclability, recycled content, take-back, etc.).				
Notify group purchasing organization (GPO) about preferences for environmentally preferable products.				
Transition 100% of PVC/DEHP-containing devices in neonatal intensive care unit (NICU) to DEHP-free alternatives.				
Work with GPO to integrate environmental criteria into upcoming contract negotiations, including participation in GPO product evaluation/steering committees where possible.				
Purchase PVC-free and DEHP-free intravenous (IV) administration sets.				
Purchase paper and paper products that are processed chlorine-free (PCF) where possible, and meet the recommended recycled content requirements from the US EPA's Comprehensive Procurement Guidelines and/or are Green Seal-certified.*				
Purchase EPEAT-registered* computers, monitors, and laptops.				
Evaluate energy efficiency of products and equipment before purchase.				
Evaluate water efficiency of products and equipment before purchase.				
Evaluate opportunities to consolidate purchase orders and frequency of deliveries as means to reduce packaging waste and transportation impact.				
Evaluate recyclability, reusability, recycled content, packaging and end of life disposal requirements for new products and equipment.				
Evaluate purchasing/leasing opportunities for document management equipment (e.g., printers, copiers, etc.).				
Waste Management and Reduction				
Develop/implement a comprehensive waste management plan for all materials and waste streams.				
Establish baseline generation rates and cost of all waste categories (at a minimum: RMW*, solid waste, recycling, universal and hazardous waste) to enhance environmental goal setting and performance tracking.				
Implement ongoing <b>process</b> for tracking waste data volume and cost for all waste streams.				
Implement cardboard recycling.				
Implement paper recycling for all paper generated at facility (including HIPAA* paper).				
Implement IT solutions that reduce paper usage (e.g., default duplex printing).				

	Fully In Place	In Progress	Aware of Program — But Not Yet Underway	Not Aware of Program — Need More Info to Evaluate
Implement beverage container recycling throughout organization (cafeteria <i>and</i> patient areas).				
Implement construction and demolition (C&D) debris recycling for all building and renovation projects.				
Achieve and maintain a minimum recycling rate of > 10% of total waste stream using Practice Greenhealth's <i>Recyclable Materials in Healthcare</i> checklist*.				
Achieve and maintain a recycling rate of > 25% of total waste stream using Practice Greenhealth's <i>Recyclable Materials in Healthcare</i> checklist*.				
Develop a facility policy in collaboration with infection control committee that <u>defines</u> RMW* and states minimization goals.				
Achieve and maintain RMW* generation rate of <15% of total waste stream.				
Implement a reusable sharps container program.				
Implement a blue wrap recycling program when vendor/hauler is available in your area.				
Reduce blue wrap waste by switching to reusable hard cases for sterilization of medical devices.				
Utilize fluid management system for suction canister waste.				
Institute a single-use device reprocessing initiative as a mechanism to reduce waste and cost, in compliance with FDA and other regulatory and guidance requirements, and with input from organizational ICRA* process.				
Demonstrate that incineration is used <u>only</u> to dispose of the fraction of RMW* <u>required</u> by regulation to be incinerated. (Not all states require incineration - check regulations!)				
Mercury Elimination				
Establish a corporate or facility policy stating organization's commitment to the reduction and virtual elimination of mercury.				
Establish protocols and written procedures for safe handling of any mercury remaining on-site.				
Institute recycling or regulated safe disposal procedures to ensure mercury-containing waste (including dental amalgam) is managed as universal or hazardous waste.				
Educate and train all employees about facility mercury protocols, including information about mercury and its effects on human health and the environment.				
Inventory all mercury devices/sources within the organization and have a plan in place to substitute non-mercury devices.				
Replace all patient mercury thermometers with non-mercury alternatives.				
Replace all or majority (75% +) of blood pressure devices (sphygmomanometers) with non-mercury alternative and have a replacement plan in place for total elimination.				
Replace majority (75% +) of clinical devices (e.g., bougies, miller-abbott tubes, cantor tubes, dilators) that contain mercury and have plan in place for total elimination.				
Implement program to recycle all fluorescent lamps (including green tips).				
Phase out use of mercury-containing fixatives, stains and laboratory equipment where safe and effective alternatives exist.				
Implement program for battery collection and recycling.				

	Fully In Place	In Progress	Aware of Program — But Not Yet Underway	Not Aware of Program — Need More Info to Evaluate
Contract with electronics waste/recycling vendor for legal and environmentally responsible electronics (or e-waste) management.				
Characterize and properly manage and minimize use of all mercury-containing pharmaceuticals.				
Install mercury amalgam separators in all dental chairs onsite.				
Energy, Water and Climate				
Become an Energy Star Partner.				
Benchmark energy usage with Energy Star's Portfolio Manager*.				
Undertake retro-commissioning for building systems.				
Conduct an energy audit.				
Achieve 10% reduction in energy use from baseline over past 12 months with goal of achieving Top $25^{th}$ percentile nationally (or score of $\geq$ 75 on Energy Star Performance Rating System).				
Achieve Top 25 <sup>th</sup> percentile (score of $\geq$ 75 on Energy Star Performance Rating System).				
Transition to electronic ballast and energy-efficient lamps (T8 or T5).				
Transition to LED* exit signs.				
Install occupancy sensors or timers to reduce use of lighting in unoccupied and appropriate areas (e.g., public restrooms).				
Assess and adjust current lighting levels against recommended illuminance levels, based on IESNA's <i>Lighting Handbook</i> * and other state requirements.				
Identify and increase efficiencies in building envelope (cool roofs, window coatings, etc.).				
In collaboration with IT, install software to reduce energy use from computers and monitors.				
Assess and upgrade to achieve efficiencies in air distribution systems.				
Optimize (and right-size) cooling system performance.				
Generate renewable energy on-site (e.g., PVs, CHP)*.				
Purchase off-site renewable energy sources (wind, hydropower, solar, bio-fuel).				
Achieve at least 5% renewable energy from either on-site or off-site generation.				
Track facility's water usage/costs using the water tracking feature of Energy Star's Portfolio Manager*.				
Conduct a water use audit in collaboration with a repair initiative that fixes leaks, drips and unnecessary flows.				
Reduce water usage on faucets with devices that reduce flow (e.g., motion sensors and aerators), in appropriate areas as informed by the ICRA* process.				
Utilize low-flow fixtures for toilets, faucets and urinals in appropriate areas.				
Utilize closed system for cooling as means of reducing process water.				
Employ condensate recovery systems.				
Install or maintain a conductivity meter or automatic controls for cooling tower management.				

	Fully In Place	In Progress	Aware of Program — But Not Yet Underway	Not Aware of Program — Need More Info to Evaluate
Achieve use of at least 50% non-potable water for make-up water in cooling towers.				
Implement water conservation initiative in kitchen and cafeteria.				
Utilize rainwater or grey water for landscape irrigation or utilize xeriscaping or native vegetation to reduce watering requirements.				
Quantify and track total GHG* emissions for the organization using the GHG Protocol Corporate Standard*, the EPA Climate Leaders Calculator™, or other method.				
Purchase carbon offsets.				
Environmental Services				
Conduct an Infection Control Risk Assessment (ICRA) that identifies appropriate level of cleaning and disinfection for defined surfaces and areas (e.g., use of detergents in corridors or cleaner disinfectants in patient rooms).				
In collaboration with Infection Prevention & Control Committee, develop and maintain an environmentally preferable cleaning policy for the facility that addresses all cleaning/ disinfection of major surfaces.				
Utilize GreenSeal <sup>™</sup> * or EcoLogo <sup>™</sup> -certified* cleaning products for available product categories.				
Purchase disposable paper products (bath & facial tissue, paper towels) and trash liners that meet US EPA Comprehensive Procurement Guidelines or are Green Seal™-certified where applicable.				
Utilize antimicrobial hand soaps only in areas defined by Infection Prevention & Control Committee and ICRA* process.				
Utilize microfiber mops and cleaning cloths as mechanism to reduce water and chemical use, reduce cross contamination and ergonomic stress.				
Implement Integrated Pest Management (IPM) program that only uses least toxic pesticides and then <u>only</u> as a last resort.				
With Facilities, Engineering and Food Services, ensure structural measures are taken to prevent pest harborage and food and water sources for pests.				
Educate staff about proper management and disposal of food as it relates to pest control.				
Utilize walk-off mats at major entryways and in areas under construction and renovation as defined by the project ICRA*.				
Prohibit smoking from the campus.				
Food Services				
Commit to and sign the Health Care Without Harm <i>Healthy Food in Healthcare Pledge</i> * for practical sustainable food purchasing policies and strategies.				
Purchase food service paper products that contain recycled and processed chlorine-free (PCF) content where applicable.				
Utilize reusable dishware and utensils in cafeteria.				
Ensure energy and water-efficient dishwashing and food disposal equipment.				
Purchase bio-based or compostable food serviceware where reusable dishware cannot be used (take-out containers, etc.).				

	Fully In Place	In Progress	Aware of Program — But Not Yet Underway	Not Aware of Program — Need More Info to Evaluate
Purchase at least 10% local/regional, seasonal and/or organic foods for patient meals and cafeteria.				
Purchase rBGH-free* milk and dairy products for patient meals, cafeteria and on-site convenience stores.				
Purchase meat and poultry that do not contain non-therapeutic antibiotics.				
Purchase coffee and tea that have been certified by one or more of the following eco- labels: Fair Trade Certified*, Certified Organic*, Bird-Friendly* or Rainforest Alliance Certified*.				
Create set of health and nutrition criteria for food offered in hospital vending machines, on-site convenience stores and on-site food service providers.				
Establish on-site organic garden for use in cafeteria, patient meals or on-site farm stand.				
Establish Farmer's Market or farm stand on-site.				
Implement recycling for recyclable Food Service materials including glass, metal cans, cardboard, plastic bottles, shrink wrap and wooden pallets.				
Implement food composting program in food preparation areas, cafeteria and for patient food waste.				
Establish food donation program with local charities for usable food, while meeting health codes.				
Implement Room Service program for patient meals as mechanism to reduce food waste and increase patient satisfaction.				
Sustainable Sites Management				
Provide outdoor places of respite on the healthcare campus to connect healthcare patients, staff and visitors to the health benefits of the natural environment.				
Implement an environmentally sensitive landscape and building exterior management plan which reduces the use of harmful chemicals, energy, water, air pollution, solid waste and/or chemical runoff (e.g., gasoline, oil, antifreeze, window cleaner, snow removal, salts).				
Create a conservation plan for existing natural site areas and restore damaged site areas to provide habitat and promote biodiversity.				
Implement strategies (e.g., landscaping, vegetative or 'green' roofing, canopies, underground parking) to reduce heat island effect. Utilize ICRA* process for decisions on 'green roofing' when affecting patient care areas.				
Transportation Operations				
Provide incentives to employees for using alternative modes of transportation.				
Provide and maintain a shuttle service to commuter transit and subway stations.				
Provide preferred parking for carpool participants and low-emission, fuel-efficient vehicles.				
Transition fleet to low-sulfur diesel fuels and/or biodiesel.				

	Fully In Place	In Progress	Aware of Program — But Not Yet Underway	Not Aware of Program — Need More Info to Evaluate
Chemical Management				
Develop a comprehensive chemical management policy (TJC Environment of Care Standard 3.10.1*).				
Perform a hazardous chemical/material audit by hospital department and update at least annually.				
Train staff to respond to and be prepared for hazardous spills, with clearly labeled spill supplies and signage.				
Eliminate use of the sterilant ethylene oxide (EtO)* for minimum 90% of equipment requiring sterilization while maintaining compliance with regulatory requirements.				
Transition away from the high level disinfectant glutaraldehyde to safer alternatives (as defined by the ICRA* process involving Infection Prevention & Control, Employee Health and Central Supply) while maintaining compliance with regulatory requirements and patient, employee and equipment safety.				
In facilities where glutaraldehyde and EtO* have not yet been phased out, verify compliance with the regulatory standards for safeguarding staff from exposure during high-level disinfection or sterilization procedures.				
Replace manual high-level disinfection with automatic machine washers/disinfectors to minimize staff exposure to liquid high-level disinfectants.				
Develop and implement a laboratory solvent reprocessing program for alcohols, xylene, and formalin—where applicable.				
Characterize and properly manage all wastes generated in the laboratory (ensure compliance with RCRA and OSHA)*.				
Utilize microscale chemistry as a strategy to reduce chemical wastes.				
Recycle silver (from x-ray films) in Radiology—where applicable.				
Recycle used lead aprons from Radiology.				
Utilize a formulary review process to identify and characterize which pharmaceuticals may become RCRA* hazardous waste or pose an environmental risk at end of life.				
Develop and implement a policy for the receipt, handling, storage, labeling, transport, and end disposal of all pharmaceuticals, including staff training and education.				
Establish a policy and process for safe handling and disposal of all cytotoxic drugs/ chemotherapy waste as <i>hazardous</i> waste (with emphasis on clarification between trace vs. bulk chemo waste).				
Minimize pharmaceutical waste through combination of inventory control, stock rotation, reduced packaging, and minimization of personal protective equipment waste.				
Implement pharmaceutical sample policy that requires all samples to be logged in to the facility and prohibits pharmaceutical samples that expire within six months.				



# Practice Greenhealth Eco-Checklist<sup>™</sup> for Operations Glossary of Terms

**BFR:** Brominated Flame Retardants or BFRs are halogenated flame retardants containing bromine, and are used in products ranging from mattresses and cubicle curtains to pulse oximeters and foam packaging. Concerns relate to potential for BFRs to accumulate in fatty tissue and pose a risk to human health. BFRs are associated with several health effects in animal studies, including neurobehavioral toxicity and thyroid hormone disruption, for example. More information available at: http://www.noharm.org/us/bfr/issue

**Bird-Friendly®:** The Smithsonian Migratory Bird Center (SMBC) encourages the production of shade grown coffee, and the conservation of migratory birds, through its Bird-Friendly® seal of approval. More information available at: http://nationalzoo. si.edu/ConservationAndScience/MigratoryBirds/Coffee/lover.cfm

**BPA:** Bisphenol A or BPA is a chemical produced in large quantities for use primarily in the production of polycarbonate plastics and epoxy resins. Bisphenol A can leach into food from the protective internal epoxy resin coatings of canned foods and from consumer products such as polycarbonate tableware, food storage containers, water bottles, and baby bottles according to the National Toxicology Program.

Certified Organic<sup>®</sup>: US Department of Agriculture's National Organic Program (NOP) develops, implements, and administers national production, handling, and labeling standards for organic agricultural products. More information available at: http://www. ams.usda.gov/AMSv1.0/ams.fetchTemplateData.do?te mplate=TemplateA&navID=NationalOrganicProgram &leftNav=NationalOrganicProgramBage=NOPNatio nalOrganicProgramHome&acct=AMSPW

**CHP:** Combined Heat and Power or CHP is an approach to generating power and thermal energy from a single fuel source. Learn more at EPA's Combined Heat and Power Partnership. Available at: http://www.epa.gov/chp/

Climate Leaders Calculator: EPA's Inventory Calculator for Low Emitters (MS Excel) is a multi-page spreadsheet to record inventory data for each emissions source type. Available at: http://www.epa.gov/ stateply/resources/lowemitters.html

**DEHP:** Di(2-ethylhexyl) phthalate or DEHP is a plasticizer used to make PVC medical devices soft and flexible. Concerns relate to its ability to leach out of PVC medical devices and potentially impact vulnerable patient populations, particularly male neonates in a neonatal intensive care setting, according to a Public Health Notification from the US Food and Drug Administration (FDA). More information available at: http://www.fda.gov/cdrh/safety/dehp.html

EcoLogo<sup>™</sup>: Third party certification program based in Canada that certifies cleaning products (among other product categories). Available at: http://www. ecologo.org/en/certifiedgreenproducts/ Energy Star's Portfolio Manager: An interactive energy management tool that allows one to track and assess energy and water consumption across an entire portfolio of buildings in a secure online environment. Available at: http://www.energystar. gov/index.cfm?c=evaluate\_performance.bus\_portfoliomanager

**EPEAT:** The Electronic Product Environmental Assessment Tool or EPEAT is a system to help purchasers in the public and private sectors evaluate, compare and select desktop computers, notebooks and monitors based on their environmental attributes. More information available at: http://www.epeat.net/

**EtO:** Ethylene Oxide or EtO is used as a sterilant for certain medical equipment and supplies. According to OSHA, EtO is both flammable and highly reactive. Acute exposures to EtO gas may result in respiratory irritation and lung injury, headache, nausea, vomiting, diarrhea, shortness of breath, and cyanosis. Chronic exposure has been associated with the occurrence of cancer, reproductive effects, mutagenic changes, neurotoxicity, and sensitization.

Fair Trade Certified®: The Fair Trade Certified™ label guarantees consumers that strict economic, social and environmental criteria were met in the production and trade of an agricultural product. Available at: http://www.transfairusa.org/content/certification/ overview.php

**GHG:** Greenhouse Gases or GHGs are gases in the atmosphere that absorb and emit radiation and contribute to global warming. The six GHGs covered by the Kyoto Protocol are: carbon dioxide ( $CO_2$ ), methane ( $CH_4$ ), nitrous oxide ( $N_2O$ ), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF<sub>6</sub>).

GHG Protocol Corporate Standard: The GHG Protocol Corporate Standard provides standards and guidance for companies and other organizations preparing a GHG emissions inventory. It covers the accounting and reporting of the six greenhouse gases covered by the Kyoto Protocol, and is designed to simplify and reduce the costs of compiling a GHG inventory while increasing consistency and transparency in GHG accounting and reporting. Available at: http://www.ghgprotocol.org/standards/corporatestandard

**GreenSeal:** Third party certification program that certifies cleaning and paper products (among other product categories). Available at: http://www.greenseal.org/findaproduct/index.cfm

Health Care Without Harm's Healthy Food in Healthcare Pledge: By signing the pledge, facilities are demonstrating leadership by sending an important signal to the marketplace and policy makers about their interest in local, nutritious, sustainable food and by beginning to model healthy food practices. Available at: http://www.noharm.org/us/ food/pledge HIPAA: The Health Insurance Portability and Accountability Act or HIPAA regulates the protection of personal health information such as paper documents that contain protected patient information. More information available at: http://www.hhs.gov/ ocr/hipaa/

ICRA: Infection Control Risk Assessment or ICRA is a multidisciplinary, organizational, documented process that, after considering the facility's patient population and program, focuses on reduction of risk from infection, acts through phases of facility planning, design, construction, renovation, facility maintenance, and coordinates and weighs knowledge about infection, infectious agents, and care environment, permitting the organization to anticipate potential impact. More information available at: http://www.premierinc.com/quality-safety/ tools-services/safety/topics/construction/icra.jsp

**IESNA's Lighting Handbook:** The Illuminating Engineering Society of North America or IESNA has produced a Lighting Handbook used as reference standard by the 2008 Professional Engineer's Guide to the ENERGY STAR\* Label for Commercial Buildings. Appropriate illumination of interior occupied spaces and the generally unoccupied exterior spaces (e.g., parking garages and parking lots) associated with the building must be verified as part of review for the ENERGY STAR label. Appropriate illumination is defined by current industry standards for commercial illumination.

IRS Schedule H, Form 990: In December of 2007, the IRS released its final Form 990 and new schedule H, which tax-exempt hospitals must use to demonstrate compliance with the community benefit standard. Available at: http://www.irs.gov/charities/ article/0,,id=176613,00.html

**LED:** Light-Emitting-Diode or LEDs are an energy-efficient lighting technology.

**OSHA:** The Occupational Safety and Health Administration or OSHA has promulgated regulations that oversee the management of hazardous materials in commercial entities.

#### Practice Greenhealth's *Recyclable Materials in Healthcare:* Available at: www.practicegreenhealth. org and typing title in search box.

**PV:** Photo Voltaic or PV technology is related to the application of solar cells for energy by converting sunlight directly into electricity.

**PVC:** Polyvinyl Chloride or PVC is a plastic commonly used in IV bags and tubing, other medical devices and construction applications such as flooring, wall coverings and pipes. Concerns relate to the potential for the creation of dioxin, a known human carcinogen and endocrine disruptor, during the manufacture and disposal of PVC plastic materials.

Rainforest Alliance Certified: Products are produced using farm and forestry methods that are derived from farms and forests where water, soil and wildlife habitat are conserved, where workers are treated well, where families have access to education and healthcare, and where communities benefit. More information available at: http://www.rainforestalliance.org/marketplace.cfm?id=why\_buy

**rBGH-free:** Recombinant Bovine Growth Hormone or rBGH (also known as rBST or recombinant bovine somatotropin) is a synthetic hormone used to increase milk production in cattle. There are concerns around the use of this substance in milk and dairy production due to its adverse impacts on animals and potential harm to humans. More information available at: http://www.noharm.org/details. cfm?ID=1104&type=document

**RCRA:** The Resource Conservation and Recovery Act or RCRA is the U.S. Environmental Protection Agency's statute on identifying, managing, storing, handling, transporting and disposing of hazardous waste from commercial entities. **RMW:** Regulated Medical Waste or RMW connotes healthcare-generated waste that may pose an infectious risk to human health. RMW is defined at the state level, typically by the state health or environmental agency. RMW is also typically called infectious medical waste or biohazardous waste. Find state regulations for RMW at: http://www.envcap. org/statetools/rmw/rmwlocator.html

**TJC:** The Joint Commission Environment of Care Standard 3.10.1: The Joint Commission standard covering the development of a management plan for hazardous materials and waste.

US EPA's Comprehensive Purchasing Guidelines: The guidelines are part of EPA's continuing effort to promote the use of materials recovered from solid waste. Buying recycled-content products ensures that the materials collected in recycling programs will be used again in the manufacture of new products. Available at: http://www.epa.gov/epawaste/ conserve/tools/cpg/products/index.htm **VOC**: Volatile Organic Compounds or VOCs are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects. Concentrations of many VOCs are consistently higher indoors (up to 10 times higher) than outdoors, and are emitted by a wide array of products, e.g., paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, and office equipment such as copiers and printers. Learn more at: http://www.pharosproject.net/wiki/index. php?title=VOCs