

# Environmental Services

1-2 points

**ES Credit 1.1-1.2**

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## Environmentally Preferable Cleaning: **Policy Development**

### Intent

Develop and implement an operational policy to limit exposure of building occupants and environmental services personnel to potentially hazardous chemical, biological and particulate contaminants from cleaning products and procedures, while ensuring effective infection control processes.

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### Health Issues

Sustainable cleaning practices are an essential part of sustainable building. Traditional cleaning products present a variety of human health and ecological concerns. They may contribute to poor indoor air quality and contain chemicals that cause cancer, reproductive disorders, respiratory ailments, eye and skin irritation, central nervous system impairment, and other human health effects. Cleaning products have also been shown to be a primary cause of work-related asthma, particularly in nurses and cleaning staff. In addition, some of these products contain Persistent Bioaccumulative and Toxic chemicals (PBTs), are classified as hazardous waste, and/or otherwise contribute to environmental pollution during their manufacture, transport, use, and/or disposal. In health care settings, continuous 24/7 building occupancy leads to the requirement for cleaning while the building is occupied. Non-toxic and least-toxic cleaning products exist for nearly every health care facility need.

### Credit Goals

Develop and maintain an environmentally preferable cleaning policy for the facility addressing GGHC ES Credits 1.3-1.5 & 1.6 in addition to the criteria listed below. At a minimum, the policy must address all surfaces, including: floors, walls, furniture and stationary and rolling stock medical equipment.

*Note: This credit does not apply to Food Service areas. Visit GGHC FS Credit 8.1-8.2: Chemical Management for Food Services for more information.*

AND

## ES Credit 1.1-1.2 continued

### Environmentally Preferable Cleaning: Policy Development

#### ES Credit 1.1 (1 point)

Include the following criteria in the facility's environmentally preferable cleaning policy:

- Establish standard operating procedures (SOPs) addressing how an effective cleaning and hard floor and carpet maintenance system will be consistently utilized, managed, audited and effectively staffed. The SOPs shall include the following criteria:
  - Differentiation of cleaning zones within the facility as defined by infection control and environmental services policies and procedures. (e.g., from high touch, patient areas to general administration areas as delineated by an infection control committee risk assessment) to determine the kinds of cleaning products and processes to be used within each area. Based on the infection control risk assessment process, minimize use of disinfectants where not necessary for infection control reasons. Differentiation shall be based on the 2003 U.S. Centers for Disease Control and Prevention (CDC) *Guidelines for Environmental Infection Control in Healthcare Facilities*, *CDC Management of Multidrug-Resistant Organisms in Healthcare Settings, 2006*, and the American Society for Healthcare Environmental Services (ASHES) *Practice Guidance*.
  - For areas that require disinfection, use only EPA-registered hospital-use disinfectants " under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) requirements.
  - Establish cleaning protocols that protect vulnerable building occupants.
  - Procedures for environmentally preferable cleaning of rolling stock, moveable medical equipment and non-critical patient care equipment as defined by the 2003 CDC *Guidelines for Environmental Infection Control in Healthcare Facilities* and EPA-registered hospital-use disinfectants under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).
  - Specifications for the use of chemical concentrates with appropriate dilution systems to minimize chemical use.
  - Manufacturer calibration of dispensing equipment at a minimum annually.
- Outline strategies for promoting and improving hand hygiene, emphasizing hand washing in accordance with the CDC "Hand Hygiene Guidelines."
- Establish guidelines for safe handling and storage of cleaning chemicals used in the facility, including a plan for managing hazardous spills or mishandling incidents in accordance with Joint Commission EC3.10.3, OSHA Hazard Communication, OSHA permissible exposure limits (PEL), NIOSH recommended exposure limits (REL) and/or EPA RCRA standards.
- Upon hire and annually, provide site-specific training for environmental services personnel in proper cleaning and disinfecting techniques, the proper concentration and dilutions for each chemical in use, and the hazards, use, maintenance, recycling and disposal of cleaning chemicals, dispensing equipment and packaging.

## **ES Credit 1.1-1.2 continued**

### **Environmentally Preferable Cleaning: Policy Development**

#### **ES Credit 1.2 (1 point in addition to ES Credit 1.1)**

In addition to GGHC ES Credit 1.1, include the following criteria in the facility's environmentally preferable cleaning policy:

- A commitment to phase in the purchase and implementation of sustainable cleaning and hard floor and carpet care products meeting the sustainability criteria outlined in ES Credit 1.3-1.5: Environmentally Preferable Cleaning: Sustainable Cleaning Products & Materials, granting preference to products that contain no added fragrance.
- A commitment to purchase cleaning products that are fragrance-free, to minimize impact on employees and vulnerable patient populations, and avoid the use of fragrance-emitting devices, air fresheners, fragrance or deodorizer sprays or urinal blocks.
- A commitment to phase in the purchase, lease, or contract use of cleaning equipment that reduces impact on Indoor Air Quality (IAQ), as outlined in ES Credit 1.6: Environmentally Preferable Cleaning: Environmentally Preferable Cleaning Equipment.
- A commitment to phase in the purchase or contracting out of sustainable floor care systems that employ "metal free" floor finish, thereby extending the period between stripping and recoating to at least twelve months. Floor care systems shall meet either Green Seal GS-40 for Industrial and Institutional Floor-Care Products OR phthalate-free products meeting Environmental Choice CCD-147 for Hard Floor Care.
- A commitment to collaborate with the purchasing department (or applicable staff) to phase in the installation of environmentally-preferable flooring systems, as defined in GGHC EP c3.1-3.5: Toxic Chemical Reduction: Facility Maintenance, Alterations & Additions, that require least toxic floor care systems, as defined in GGHC ES Credit 1.3-1.5, through the substitution of least toxic chemical care systems for current flooring systems, and consideration of replacement flooring systems that can be effectively maintained with least toxic products.
- Annually evaluate new technologies, procedures and processes to ensure continuous improvement.
- Provide a mechanism for collecting occupant feedback (both patients and staff) on odors or concerns about cleaning products.

#### **Suggested Documentation**

- Compile documentation (e.g., records, inspections, etc.) and annually review progress associated with the environmentally preferable cleaning policy and its implementation in accordance with Credit Goals.

## ES Credit 1.1-1.2 continued

### Environmentally Preferable Cleaning: Policy Development

#### Reference Standards

American Society for Healthcare Environmental Services (ASHES), Practice Guidance, <http://www.ASHES.org>

Centers for Disease Control and Prevention. 2003. "Guidelines for Environmental Infection Control in Healthcare Facilities," <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5210a1.htm>

Centers for Disease Control and Prevention. 2002. "Hand Hygiene Guidelines Factsheet," <http://www.cdc.gov/od/oc/media/pressrel/fs021025.htm>

Centers for Disease Control and Prevention. 2006. *CDC Management of Multidrug-Resistant Organisms in Healthcare Settings*, [www.cdc.gov/ncidod/dhqp/pdf/ar/mdroguideline2006.pdf](http://www.cdc.gov/ncidod/dhqp/pdf/ar/mdroguideline2006.pdf)

Environmental Choice CCD-147 for Hard Floor Care, <http://www.ecologo.org>

Green Seal GS-40 for Industrial and Institutional Floor-Care Products, <http://www.greenseal.org/standards/industrialcleaners.htm>

Green Seal GS-41 for Industrial and Institutional Hand Cleaners, <http://www.greenseal.org> Joint Commission Environment of Care Standard EC3.10.3, <http://www.jointcommission.org> National Institute for Occupational Safety and Health (NIOSH), recommended exposure limits (REL), <http://www.cdc.gov/niosh/npg/>

U.S. Environmental Protection Agency (EPA), 40 CFR Parts 152, 156, and 158. Exemption of certain pesticide substances from Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements. Amended 1996. Federal Register 1996;61:8876-9, <http://www.epa.gov/oecaerth/civil/fifra/index.html>

U.S. Environmental Protection Agency (EPA), Resource Conservation and Recovery Act (RCRA), <http://www.epa.gov/rcraonline/>

U.S. Occupational Safety and Health Administration (OSHA) Hazard Communication, <http://www.osha.gov/SLTC/hazardcommunications/index.html>

U.S. Occupational Safety and Health Administration (OSHA), Permissible Exposure Limits (PEL), <http://www.osha.gov/SLTC/pel/index.html>

#### Potential Technologies & Strategies

- **Credit Synergies:** Coordinate implementation of this credit with GGHC IO Prerequisite 1: Integrated Operations & Maintenance Process; GGHC SSM Credit 1: Site Management; GGHC FM Credit 6: IAQ Management Plan; GGHC CM Prerequisite 2: Chemical Management Policy and Audit; GGHC ES Credit 1: Environmentally Preferable Cleaning; GGHC ES Credit 2: Entryway Systems; GGHC ES Credit 3: Indoor Integrated Pest Management; GGHC FS Credit 8: Chemical Management for Food Services; and GGHC EP Credit 2: Toxicity Prevention in Purchasing.
- Collaborate with the Infection Control Committee to identify areas where use of disinfectants can be minimized or eliminated such as floors that have not come into contact with blood or body fluids or contamination from multi-drug resistant organisms.

## ES Credit 1.1-1.2 continued

### Environmentally Preferable Cleaning: **Policy Development**

- Design operations and maintenance practices to ensure that the building functions at its highest levels of energy efficiency and indoor air quality performance, including scheduling maintenance and cleaning practices to maximize energy savings and occupant health and comfort.
- To decrease risk of cross contamination or transmission of infection, work with the Infection Control Committee to define and implement a color-coding system for cleaning chemicals. The Infection Control Committee and Environmental Services should work together to educate staff on the selected color-coding system.
- Replace aerosolized cleaning application methods in favor of pour and wipe to decrease airborne concentrations of chemicals. Use portion control devices such as mechanical dispensers, which help insure the safe mixing of cleaning solutions and reduce packaging and chemical consumption.
- Use chemicals that are automatically diluted using cold water, and/or use a chemical measuring and dilution control system that limits worker exposure to chemical concentrates.
- Refer to applicable state and local ordinances and guidelines; many states are enacting green standards for building maintenance.
- Specify textiles (upholstery) that can be cleansed with water-based, not solvent-based cleaners.
- Choose bathroom paper products with a preference for recycled content, chlorine free products. See GGHC ES Credit 1.5 for specifications.
- Utilize cleaning recommendations stated in the Public Health Notification from FDA, CDC, EPA and OSHA: Avoiding Hazards with Using Cleaners and Disinfectants on Electronic Medical Equipment, October 2007.

### Resources

California Air Resources Board, <http://www.calregs.com>

Inform. *Cleaning for Health: Products and Practices for a Safer Indoor Environment*, August 2002, <http://www.informinc.org/cleanforhealth.php>

National Institute of Building Sciences, Indoor Environmental Quality (IEQ) Project, Operations & Maintenance, <http://ieq.nibs.org/om/>

Bruno Nicklaus, Cleaning and Maintenance Management. *Be mindful of green pitfalls, components, benefits. Helpful tips to consider when developing a green cleaning program.* July 2007, [http://www.ungerglobal.com/worxcms\\_files/CMM.GreenCleaningBenefits.7.07.pdf](http://www.ungerglobal.com/worxcms_files/CMM.GreenCleaningBenefits.7.07.pdf)

Public Health Notification from FDA, CDC, EPA and OSHA: Avoiding Hazards with Using Cleaners and Disinfectants on Electronic Medical Equipment. Oct. 2007, <http://www.fda.gov/cdrh/safety/103107-cleaners.html>

Practice Greenhealth, *Ten Step Guide To Green Cleaning*, <http://www.practicegreenhealth.org>

Practice Greenhealth, *Green Cleaning Webpage*, <http://www.practicegreenhealth.org>

## ES Credit 1.1-1.2 continued

### Environmentally Preferable Cleaning: Policy Development

Spaulding EH. Role of chemical disinfection in preventing nosocomial infections. In: Proceedings of the International Conference on Nosocomial Infections, 1970. Brachman PS, Eickhoff TC, eds. Chicago, IL: American Hospital Association, 1971:247--54.

U.S. Centers for Disease Control and Prevention. Appendix A: Regulatory Framework for Disinfectants and Sterilants. MMWR. *Recommendations and Reports*. December 19, 2003 / 52(RR17); 62-64, <http://www.cdc.gov/MMWR/preview/mmwrhtml/rr5217a2.htm>

U.S. Department of Labor, Occupational Safety and Health Administration. 29 CFR Part 1910.1030. Occupational exposure to bloodborne pathogens; needlesticks and other sharps injuries; final rule. Federal Register 2001;66:5317--25. As amended from and includes 29 CFR Part 1910.1030. Occupational exposure to bloodborne pathogens; final rule. Federal Register 1991;56:64174—82, <http://www.osha.gov/SLTC/dentistry/index.html>.

U.S. Environmental Protection Agency (EPA), 40 CFR Parts 152, 156, and 158. Exemption of certain pesticide substances from federal insecticide, fungicide, and rodenticide act requirements. Amended 1996. Federal Register 1996;61:8876-9, <http://www.epa.gov/lawsregs/search/40cfr.html>

U.S. Environmental Protection Agency (EPA), Antimicrobial Science Policies, Disinfectant Technical Science Section (DIS/TSS), <http://www.epa.gov/oppad001/sciencepolicy.htm>

U.S. Environmental Protection Agency (EPA), Sanitizing Rinses (for previously cleaned food-contact surfaces), DIS/TSS-4 Jan 30, 1979, [http://www.epa.gov/oppad001/dis\\_tss\\_docs/dis-04.htm](http://www.epa.gov/oppad001/dis_tss_docs/dis-04.htm)

U.S. Environmental Protection Agency (EPA), Selected EPA-Registered Disinfectants (EPA's Registered Sterilizers, Tuberculocides, and Antimicrobial Products Against Certain Human Public Health Bacteria and Viruses, <http://www.epa.gov/oppad001/chemregindex.htm>

U.S. Food and Drug Administration (FDA) and U.S. Environmental Protection Agency (EPA). Memorandum of understanding between the FDA and EPA: notice regarding matters of mutual responsibility---regulation of liquid chemical germicides intended for use on medical devices. Rockville, MD: US Department of Health and Human Services, Public Health Service, Food and Drug Administration, US Environmental Protection Agency, 1993.

US Food and Drug Administration (FDA). Interim measures for registration of antimicrobial products/liquid chemical germicides with medical device use claims under the memorandum of understanding between EPA and FDA. Rockville, MD: US Department of Health and Human Services, Food and Drug Administration, 1994.

US Food and Drug Administration (FDA). Guidance for industry and FDA reviewers: content and format of premarket notification [510(k)] submissions for liquid chemical sterilants/high level disinfectants. Rockville, MD: US Department of Health and Human Services, Food and Drug Administration, 2000, <http://www.fda.gov/cdrh/ode/397.pdf>.

1-3 points

**ES Credit 1.3-1.5****Environmentally Preferable Cleaning:  
Products & Materials****Intent**

Minimize exposure of building occupants and cleaning personnel to potentially hazardous chemical, biological and particulate contaminants, and reduce use of virgin paper resources in janitorial paper and other disposable product applications through purchase and proper implementation of environmentally preferable cleaning products and materials.

**Health Issues**

Sustainable cleaning practices are an essential part of sustainable building. Traditional cleaning products present a variety of human health and ecological concerns. They may contribute to poor indoor air quality and contain chemicals that cause cancer, reproductive disorders, respiratory ailments (including occupational asthma), eye and skin irritation, central nervous system impairment, and other human health effects. In addition, some of these products contain persistent bioaccumulative and toxic chemicals (PBTs), are classified as hazardous waste, and/or otherwise contribute to environmental pollution during their manufacture, transport, use, and/or disposal. In health care settings, continuous 24/7 building occupancy leads to the requirement for cleaning while the building is occupied.

Each year, US commercial and institutional users consume 4.5 billion pounds of janitorial paper and 35 billion plastic trash liners. Paper products with high recycled content reduce sulfur and greenhouse gas emissions during manufacture, conserve virgin forest resources and contribute to healthier forest ecosystems.

Non-toxic and least-toxic cleaning products and materials exist for general cleaning purposes in a health care facility. By working with infection control committees, hospitals can reduce the amount of unnecessary disinfection as part of their toxicity reduction and indoor air quality improvement plan.

**Credit Goals**

Note: This credit does not apply to Food Service areas. Visit GGHC FS Credit 8.1-8.2: Chemical Management for Food Services for more information.

- Achieve GGHC ES Credits 1.1 & 1.2.

AND

- Implement an environmentally preferable purchasing program for cleaning products and materials, disposable paper products and trash bags. Cleaning product and material purchases include both products for use by in-house staff and products used by outsourced service providers. Perform an annual assessment in collaboration with the Infection Control Committee and Environmental Services of all cleaning chemicals used within the facility.
- Annually document any enhancements necessary to continue cleaning with environmentally preferred cleaners, including cleaners that are not referenced in GGHC ES Credit 1.1, and identify purchasing parameters for cleaning chemical selection (e.g. chemical ingredients, fragrance level, etc.).



**ES Credit 1.3-1.5** continued**Environmentally Preferable Cleaning:  
Products & Materials**

AND

**ES Credit 1.3-1.4 (2 points)**

- One point (up to 2 total) will be awarded for the purchase and implementation of every five categories of environmentally preferable cleaning products listed below where 100% of procurement meets one or more of the referenced standards for the category. Ensure that all procurement (e.g., General Purpose Cleaners, Carpet & Upholstery Cleaners, etc.) aligns with the infection control risk assessment and environmentally preferable cleaning policy outlined in GGHC ES Credit 1.1.

*Note: Hand hygiene is excluded from this credit. See GGHC CM Credit 1.2 for guidance on hand hygiene processes and products.*

CLEANER TYPE	REFERENCE STANDARDS
General Purpose Cleaners/Hard Surface Cleaners	<ul style="list-style-type: none"> <li>• Environmental Choice CCD-146 for Hard Surface Cleaners</li> <li>• Green Seal GS-37 for General-Purpose, Bathroom, Glass, and Carpet Cleaners Used for Industrial and Institutional Purposes</li> </ul>
Glass Cleaners	<ul style="list-style-type: none"> <li>• Environmental Choice CCD 146 for Hard Surface Cleaners</li> <li>• Green Seal GS-37 for General-Purpose, Bathroom, Glass, and Carpet Cleaners Used for Industrial and Institutional Purposes</li> </ul>
Carpet & Upholstery Cleaners	<ul style="list-style-type: none"> <li>• Environmental Choice CCD-148 for Carpet and Upholstery Care</li> <li>• Green Seal GS-37 for General-Purpose, Bathroom, Glass, and Carpet Cleaners Used for Industrial and Institutional Purposes</li> </ul>
Cleaning & Degreasing Compounds	<ul style="list-style-type: none"> <li>• Environmental Choice CCD-110 for Cleaning and Degreasing Compounds</li> <li>• Green Seal GS-34 for Cleaning and Degreasing Agents</li> </ul>
Floor Cleaners/Strippers/Waxes	<ul style="list-style-type: none"> <li>• Environmental Choice CCD-147 for Hard Floor Care</li> <li>• Green Seal GS-40 for Industrial and Institutional Floor-Care Products</li> </ul>
Metal Polish	<ul style="list-style-type: none"> <li>• California Code of Regulations maximum allowable VOC levels for the specific product category</li> </ul>
Drain/Grease Trap Additives	<ul style="list-style-type: none"> <li>• Environmental Choice CCD-113 for Drain or Grease Traps Additives</li> </ul>
Fragrances/Odor Control Additive	<ul style="list-style-type: none"> <li>• Environmental Choice CCD-112 for Digestion Additives for Cleaning and Odor Control</li> <li>• Environmental Choice CCD-115 for Odor Control Additives</li> </ul>
Laundry Soaps/Cleaners	<ul style="list-style-type: none"> <li>• Non-phosphated (NP) detergents, and detergents formulated without nonylphenol ethoxylate (NPE)<sup>i</sup>. Also review Design for the Environment's (DfE) Key Characteristics of Laundry Detergent Ingredients</li> <li>• GreenSeal GC-11 Environmental Criteria for Powdered Laundry Bleach</li> </ul>



**ES Credit 1.3-1.5** continued

**Environmentally Preferable Cleaning:  
Products & Materials**

AND/OR

**ES Credit 1.5 (1 point)**

- One point will be awarded for the purchase and implementation of minimum five of the below categories of disposable products where 100% of procurement meets the referenced standard listed below. In addition, all disposable products shall be certified Processed Chlorine-Free® (PCF), if applicable. Ensure that all procurement aligns with the infection control risk assessment and environmentally preferable cleaning policy outlined in GGHC ES Credit 1.1.

DISPOSABLE PRODUCT	REFERENCE STANDARDS
Toilet tissue	<ul style="list-style-type: none"> <li>• Green Seal GS-01 for Tissue Paper</li> </ul>
Paper hand towels	<ul style="list-style-type: none"> <li>• Green Seal GS-09 for Paper Towels and Napkins</li> </ul>
Industrial wipes	<ul style="list-style-type: none"> <li>• Most current EPA Comprehensive Purchasing Guidelines</li> </ul>
Facial tissues	<ul style="list-style-type: none"> <li>• Green Seal GS-01 for Tissue Paper</li> </ul>
Plastic trash liners- solid waste	<ul style="list-style-type: none"> <li>• Environmental Choice CCD-126 for Plastic Film Products</li> </ul>
Plastic trash liners- medical waste	<ul style="list-style-type: none"> <li>• Environmental Choice CCD-126 for Plastic Film Products</li> <li>• Cadmium-free</li> </ul>
Plastic trash liners- chemotherapy	<ul style="list-style-type: none"> <li>• Environmental Choice CCD-126 for Plastic Film Products</li> </ul>

*Note: Recycled content thresholds referenced in Green Seal standards meet or exceed the U.S. EPA Comprehensive Purchasing Guidelines.*

## ES Credit 1.3-1.5 continued

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### Environmentally Preferable Cleaning: Products & Materials

#### Suggested Documentation

- ❑ Compile and annually revise documentation (e.g., records, inspections, cost data, etc.) of sustainable cleaning products and materials purchasing in accordance with Credit Goals.

#### Reference Standards

Green Seal GS-01 for Tissue Paper, <http://www.greenseal.org>

Green Seal GS-09 for Paper Towels and Napkins, <http://www.greenseal.org>

Green Seal GS-34 for Cleaning and Degreasing Agents, <http://www.greenseal.org>

Green Seal GS-37 for General-Purpose, Bathroom, Glass, and Carpet Cleaners Used for Industrial and Institutional Purposes, <http://www.greenseal.org>

Green Seal GS-40 for Industrial and Institutional Floor-Care Products, <http://www.greenseal.org>

Green Seal GS-41 for Industrial and Institutional Hand Cleaners, <http://www.greenseal.org>

Environmental Choice CCD-104 for Hand Cleaners / Hand Soaps, <http://www.ecologo.org>

Environmental Choice CCD-110 for Cleaning and Degreasing Compounds, <http://www.ecologo.org>

Environmental Choice CCD-112 for Digestion Additives for Cleaning and Odor Control, <http://www.ecologo.org>

Environmental Choice CCD-113 for Drain or Grease Traps Additives, <http://www.ecologo.org>

Environmental Choice CCD-115 for Odor Control Additives, <http://www.ecologo.org>

Environmental Choice CCD-146 for Hard Surface Cleaners, <http://www.ecologo.org>

Environmental Choice CCD-147 for Hard Floor Care, <http://www.ecologo.org>

Environmental Choice CCD-148 for Carpet and Upholstery Care, <http://www.ecologo.org>

California Code of Regulations. Maximum Allowable VOC Levels, <http://www.calregs.com> and <http://www.green.ca.gov/EPP/building/cleaning.htm>

U.S. Environmental Protection Agency (EPA) Comprehensive Procurement Guidelines, <http://www.epa.gov/cpg/>

## ES Credit 1.3-1.5 continued

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### Environmentally Preferable Cleaning: Products & Materials

#### Potential Technologies & Strategies

- **Credit Synergies:** *Coordinate implementation of this credit with GGHC IO Prerequisite 1: Integrated Operations & Maintenance Process; GGHC SSM Credit 1: Site Management; GGHC FM Credit 6: IAQ Management Plan; GGHC CM Prerequisite 2: Chemical Management Policy and Audit; GGHC ES Credit 1: Environmentally Preferable Cleaning; GGHC ES Credit 2: Entryway Systems; GGHC ES Credit 3: Indoor Integrated Pest Management; GGHC FS Credit 4: Reusable and Non-Reusable Products; GGHC FS Credit 8: Chemical Management for Food Services; GGHC EP Credit 2: Toxicity Prevention in Purchasing; and, GGHC EP Credit 6: Office Supplies.*
- Ensure that all disinfectants meet 2003 CDC Guidelines for Environmental Infection Control and EPA-registered hospital-use disinfectants. Consider working with manufacturers and vendors to source disinfectants that also meet either California Code of Regulations maximum allowable VOC levels for the specific product category or Environmental Choice CCD-166: Disinfectants and Disinfectant-Cleaners.
- New cleaners should be chosen according to product attributes (e.g. proven efficacy for infection reduction, fragrance-free, staff comfort, etc.), group/service purchasing contract restrictions, EPA and FDA product certification, registration or clearance, and operational changes necessitated by the product.
- Evaluate paper dispensing systems, equipment and staff training to ensure optimal product efficacy. Use large rolls in paper towel dispensers and hands-free dispensers that limit paper portions wherever possible. Avoid C-fold or multi-fold paper towel systems.
- Prohibit products that are manufactured with carcinogens, mutagens and teratogens; aerosols; asthma-causing agents (asthmagens), respiratory irritants, and chemicals that aggravate existing respiratory conditions; neurotoxins; endocrine modifiers; benzene-based solvents, butoxyethanol, chlorinated organic solvents, and paradichlorobenzene; very acidic or alkaline products; anti-microbial agents in hand soaps for patients and visitors; persistent, bioaccumulative and toxic chemicals (PBTs); and products requiring disposal as hazardous waste.
- Use combination cleaner/disinfectants and dyes judiciously and only as necessary or where appropriate.

#### Resources

American Academy of Asthma, Allergy and Occupational Immunology. *Database on Occupational Asthma*, <http://www.remcomp.com/asmanet/asmapro/asmawork.htm>

American Society for Healthcare Environmental Services (ASHES) Practice Guidance, <http://www.ASHES.org>

Stephen Ashkin, and Holly, David, *Green Cleaning for Dummies*. 2007, <http://www.greencleaningfordummies.com/>

## ES Credit 1.3-1.5 continued

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### Environmentally Preferable Cleaning: **Products & Materials**

ASTM E1971-98, *Active Standard Guide for Stewardship for the Cleaning of Commercial and Institutional Buildings*,  
[http://www.astm.org/cgi-bin/SoftCart.exe/DATABASE.CART/REDLINE\\_PAGES/E1971.htm?L+mystore+ajps3214+1204066185](http://www.astm.org/cgi-bin/SoftCart.exe/DATABASE.CART/REDLINE_PAGES/E1971.htm?L+mystore+ajps3214+1204066185)

California Consumer Products Regulation. *Regulation for Reducing Volatile Organic Compound Emissions from Consumer Products*, <http://www.arb.ca.gov/consprod/regs/cp.pdf>

California Environmental Protection Agency and the Thomson Property Group. *Greening Your Building Toward Your Bottom Line*, <http://www.documents.dgs.ca.gov/green/EPP/Greening.pdf>

Code of Practice of the International Fragrance Association,  
<http://www.ifraorg.org/Home/Code,%20Standards%20Compliance/page.aspx/8>

Centers for Disease Control and Prevention Guidelines for Environmental Infection Control in Health Care Facilities, [http://www.cdc.gov/ncidod/hip/enviro/Enviro\\_guide\\_03.pdf](http://www.cdc.gov/ncidod/hip/enviro/Enviro_guide_03.pdf)

Center for a New American Dream, *Institutional Purchasing*,  
<http://www.newdream.org/procure/products/clean.php>

Health Care Without Harm. *Guide to Choosing Safer Products & Chemicals: Implementing Chemicals Policy in Health Care*. 2007.

Carole LeBlanc, PhD, *The Massachusetts Toxic Use Reduction Institute: Surface Solutions Laboratory*, <http://www.cleansolutions.org/>

Environmental Choice CCD-166: Disinfectants and Disinfectant-Cleaners,  
[http://www.responsiblepurchasing.org/UserFiles/File/Cleaners/Standards/CCD\\_166\\_Disinfectants\\_2007.pdf](http://www.responsiblepurchasing.org/UserFiles/File/Cleaners/Standards/CCD_166_Disinfectants_2007.pdf)

Minnesota Office of Environmental Assistance. *Choosing Environmentally Preferable Cleaners*,  
<http://www.moea.state.mn.us/lc/choosing.cfm>

NAS Review Draft of EPA's *Exposure and Human Health Reassessment of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin (TCDD) and Related Compounds* (2004),  
<http://www.epa.gov/ncea/pdfs/dioxin/nas-review/>

Pennsylvania Department of General Services. *The Pennsylvania Green Building Operations and Maintenance Manual*, [http://www.dgs.state.pa.us/dgs/lib/dgs/green\\_bldg/greenbuildingbook.pdf](http://www.dgs.state.pa.us/dgs/lib/dgs/green_bldg/greenbuildingbook.pdf)

Practice Greenhealth, <http://www.practicegreenhealth.org>

Sustainable Hospitals Project, *Microfiber Mops and Cloths*, [http://sustainablehospitals.org/cgi-bin/DB\\_Report.cgi?px=W&rpt=Cat&id=31](http://sustainablehospitals.org/cgi-bin/DB_Report.cgi?px=W&rpt=Cat&id=31)

U.S. Centers for Disease Control and Prevention, CDC Guidelines for Hand Hygiene in Healthcare Settings, 2002, <http://www.cdc.gov/ncidod/dhqp/index.html>

U.S. Centers for Disease Control and Prevention, CDC Management of Multidrug-Resistant Organisms in Healthcare Settings, 2006, <http://www.cdc.gov/ncidod/dhqp/index.html>

U.S. Environmental Protection Agency (EPA), Antimicrobial Science Policies, Disinfectant Technical Science Section (DIS/TSS), <http://www.epa.gov/oppad001/sciencepolicy.htm>

## ES Credit 1.3-1.5 continued

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### Environmentally Preferable Cleaning: Products & Materials

U.S. Environmental Protection Agency (EPA), Design for the Environment (DfE) program, <http://www.epa.gov/dfe/pubs/projects/formulat/formpart.htm>

U.S. Environmental Protection Agency (EPA), *Environmentally Preferable Purchasing*, <http://www.epa.gov/epp/>

U.S. Environmental Protection Agency (EPA), Sanitizing Rinses (for previously cleaned food-contact surfaces), DIS/TSS-4 Jan 30, 1979, [http://www.epa.gov/oppad001/dis\\_tss\\_docs/dis-04.htm](http://www.epa.gov/oppad001/dis_tss_docs/dis-04.htm)

U.S. Environmental Protection Agency (EPA), Region 9. Using Microfiber Mops in Hospitals - Fact Sheet/Case Study, <http://www.epa.gov/region09/waste/p2/projects/hospital/mops.pdf>

U.S. Environmental Protection Agency (EPA), Selected EPA-Registered Disinfectants (EPA's Registered Sterilizers, Tuberculocides, and Antimicrobial Products Against Certain Human Public Health Bacteria and Viruses), <http://www.epa.gov/oppad001/chemregindex.htm>

1 point

**ES Credit 1.6****Environmentally Preferable Cleaning: Equipment****Intent**

Develop and implement an operational program to limit exposure of building occupants and environmental services personnel to potentially hazardous chemical, biological and particulate contaminants from cleaning equipment and procedures, while ensuring effective infection control processes.

**Health Issues**

Sustainable cleaning practices are an essential part of sustainable building. Traditional cleaning products present a variety of human health and ecological concerns. They may contribute to poor indoor air quality and contain chemicals that cause cancer, reproductive disorders, respiratory ailments (including occupational asthma), eye and skin irritation, central nervous system impairment, and other human health effects. In addition, some of these products contain persistent bioaccumulative and toxic chemicals (PBTs), are classified as hazardous waste, and/or otherwise contribute to environmental pollution during their manufacture, transport, use, and/or disposal. In health care settings, continuous 24/7 building occupancy leads to the requirement for cleaning while the building is occupied. Non-toxic and least-toxic cleaning products and materials exist for general cleaning purposes in a health care facility. By working with infection control committees, hospitals can reduce the amount of unnecessary disinfection as part of their toxicity reduction and indoor air quality improvement plan. The use of certain cleaning equipment can contribute to increased particulate matter in the air, increased mold and fungi in carpets, increased ergonomic discomfort, noise irritation and increased occupational asthma.

**Credit Goals**

*Note: This credit does not apply to Food Service areas. Visit GGHC FS Credit 8.1-8.2: Chemical Management for Food Services for more information.*

*Note: Visit SSM Credit 1.1: Site Management: Building Exterior & Hardscape Management for comprehensive guidance on cleaning outdoor spaces.*

- Achieve both GGHC ES Credit 1.1 & 1.2.

AND

- Develop, implement and maintain a program for the use of cleaning equipment that maximizes effective reduction of building contaminants, while meeting infection control committee recommendations and minimizing environmental and health burdens. Ensure that all procurement and cleaning practices align with the infection control risk assessment and environmentally preferable cleaning policy outlined in GGHC ES Credit 1.1. Where outsourced contracts are utilized, Credit Goals must be met by contractor's equipment and practices.

## ES Credit 1.6 continued

### Environmentally Preferable Cleaning: **Equipment**

- Conduct a reassessment of the use of chemical disinfectants and sterilants in the facility based on an infection control risk assessment (ICRA) and available evidence-based resources with target to optimize disinfectant use for high touch areas as defined by the infection control committee. Utilize alternatives such as detergent and microfiber mop heads for surfaces that carry little risk of cross transmission, such as corridors.
- The cleaning equipment program requires the following for all types of powered machines:
  - Safeguards such as rollers, bumpers or other machine design elements that reduce impact damage to the facility (Example: radius edge rotomold tanks or shrouds).
  - Designed to minimize vibration, noise, and user fatigue and reported in the user manual in accordance with ISO 5349-1 for arm vibrations and ISO 2631-1 for vibration to which the whole body is subjected and for sound pressure at operator's ear ISO 11201.
  - Equipped with environmentally preferable "sealed" batteries such as dry cell, VRLAs such as gel or absorbent glass mat (AGM), or Lithium-Ion if battery powered.
  - Operate with a sound level of less than 70 db unless otherwise noted below.
- In addition to the requirements above, the following is required for specific machine types:
  - **Vacuum cleaners** certified by the Carpet & Rug Institute Seal of Approval/Green Label Program and are capable of capturing 99.97% of particulates 0.3 microns in size.
  - **Carpet extraction equipment** used for restorative deep cleaning certified by the Carpet & Rug Institute's "Seal of Approval" Testing Program for Certified Deep Cleaning Extractors. Carpet extraction equipment shall be capable of removing sufficient moisture such that carpets can dry in less than 24 hours.
  - **Powered maintenance equipment** including electric and battery-powered floor buffers, burnishers and automatic scrubbers equipped with vacuums, guards and/or other devices for capturing fine particulates.
  - **Automated scrubbing machines** equipped with solution flow mechanisms such as variable-speed feed pumps, proportional valves or solenoids, on-board chemical metering or chemical cartridges to optimize the use of cleaning products, or alternatively may use only tap water with no added cleaning products for specifically designed equipment. Utilize cleaning products that meet the requirements of ES Credit 1.3-1.5 Use recyclable refillable cartridges where applicable, and ensure cartridges are not overfilled with cleaning product.
  - Replace string mops with **microfiber mop technology** to reduce cleaning product and water consumption, prevent cross-contamination and improve ergonomics.
  - Powered equipment **ergonomically designed** to minimize vibration, noise and user fatigue.
  - A **logbook** for all powered cleaning equipment to document the date of equipment purchase, all repair and maintenance activities and vendor specification sheets for each type of equipment in use.
  - Require **staff training** on proper equipment operating techniques before use.



## ES Credit 1.6 continued

### Environmentally Preferable Cleaning: **Equipment**

#### Suggested Documentation

- Compile and annually review a record of the cleaning equipment used in the facility and a log of the maintenance for each piece of equipment over a minimum one-year period in accordance with Credit Goals.
- Provide and annually review standard operating protocols and training materials for all cleaning equipment in use at the facility.

#### Reference Standards

Carpet & Rug Institute "Green Label" Testing Program Vacuums Cleaner Criteria, <http://www.carpet-rug.org/>

Carpet & Rug Institute's "Seal of Approval" Testing Program for Certified Deep Cleaning Extractors. <http://www.carpet-rug.org/>

ISO 5349-1: Mechanical Vibration, International Organization for Standardization, [http://www.iso.org/iso/iso\\_catalogue/catalogue\\_tc/catalogue\\_detail.htm?csnumber=32355](http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=32355)

ISO 2631-1: Mechanical Vibration and Shock, International Organization for Standardization, [http://www.iso.org/iso/iso\\_catalogue/catalogue\\_tc/catalogue\\_detail.htm?csnumber=7612](http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=7612)

ISO 11201: Acoustics, International Organization for Standardization, [http://www.iso.org/iso/iso\\_catalogue/catalogue\\_tc/catalogue\\_detail.htm?csnumber=21252](http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=21252)

#### Potential Technologies & Strategies

- **Credit Synergies:** *Coordinate implementation of this credit with GGHC IO Prerequisite 1: Integrated Operations & Maintenance Process; GGHC SSM Credit 1: Site Management; GGHC FM Credit 6: IAQ Management Plan; GGHC CM Prerequisite 2: Chemical Management Policy and Audit; GGHC ES Credit 1: Environmentally Preferable Cleaning; GGHC ES Credit 2: Entryway Systems; GGHC ES Credit 3: Indoor Integrated Pest Management; GGHC FS Credit 8: Chemical Management for Food Services; and GGHC EP Credit 2: Toxicity Prevention in Purchasing.*
- Evaluate the cleaning equipment currently in use and create a plan for upgrades to maximize effective reduction of building contaminants with minimum environmental impact while maintaining consistency with the environmentally preferable cleaning equipment policy.
- Implement a microfiber mopping pilot program in certain hospital areas. Measure chemical and water use and measure infection rate before and after pilot implementation.
- Consider installing flooring choices that do not require regular stripping or polishing.
- Integrate proper cleaning and sanitizing procedures into protocols for the operation of carpet extraction equipment to minimize risk of cross-contamination between areas.

## ES Credit 1.6 continued

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### Environmentally Preferable Cleaning: **Equipment**

#### Resources

American Society for Healthcare Environmental Services (ASHES), Practice Guidance, <http://www.Ashes.org>

Green Seal. GS 42: Environmental Standard for Cleaning Services, [http://www.greenseal.org/certification/cleaning\\_services\\_gs-42.pdf](http://www.greenseal.org/certification/cleaning_services_gs-42.pdf)

Practice Greenhealth, *Step Guide To Green Cleaning*, <http://www.practicegreenhealth.org>

Rutala WA, Gergen MF, Weber DJ, "Microbiologic evaluation of microfiber mops for surface disinfection." *American Journal of Infection Control*. 2007 Nov;35(9):569

1 point

**ES Credit 2****Entryway Systems****Intent**

Reduce exposure of building occupants and maintenance personnel to potentially hazardous chemical, biological and particle contaminants, which adversely impact air quality, health, building finishes, building systems and the environment.

**Health Issues**

Dirt, pollen, particulate matter and microorganisms are often brought into the facility on the shoes of patients, staff and visitors. 85% of all soil that enters a building is on the feet of building occupants. The substances are then able to enter the air circulation and HVAC system of the facility and can pose a potential risk to human health. The International Sanitary Supply Association (ISSA) has estimated that it costs \$600 to find and remove one pound of soil after it has been allowed to enter an average building. By capturing or preventing these substances from entering the building by utilizing a matting system, facilities can prevent potential contamination of the HVAC system and therefore prevent potential harm to patients, visitors and staff. Additionally, removing the substances concentrated in the matting system can be less expensive and time-consuming than removing it from the rest of the building.

**Credit Goals**

- Utilize entryway systems (grills, grates, mats, etc.) to reduce the amount of dirt, dust, pollen and other particles entering the building at all qualifying entryways, and develop and implement the associated cleaning strategies to maintain those entryway systems. Buildings must demonstrate that at least 10 feet in length of mats are in place at all qualifying entryways unless otherwise prevented by facility layout (in which case utilize matting as close to 10 feet in length as feasible).
- Ensure matting is designed for interior or exterior use, as appropriate, with relevant safety features for entryway use and is certified as slip resistant by the National Floor Safety Institute.

*Note: Qualifying entryways are those that serve as regular entry points for building users. Entryways to emergency treatment areas, entryways that are not in use, and entryways that only serve as emergency exits may be excluded from the requirements of this credit.*

## ES Credit 2 continued

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### Entryway Systems

#### Suggested Documentation

- Compile and annually revise diagrams illustrating entryway mats at all qualifying entryways in accordance with Credit Goals.
- Include the entryway cleaning program in the Environmentally Preferable Cleaning Policy (outlined in GGHC ES credit 1.1-1.2).
- Compile and annually review documentation of the entryway cleaning program, the number of incidents that occurred, responses, and corrective actions taken. Include analysis of the root cause and short term and long-term actions.

#### Reference Standards

National Floor Safety Institute. Standards for Slip Resistant Floor Coverings,  
[http://www.nfsi.org/certified\\_products.php](http://www.nfsi.org/certified_products.php)

#### Potential Technologies & Strategies

- **Credit Synergies:** *Coordinate implementation of this credit with GGHC IO Prerequisite 1: Integrated Operations & Maintenance Process; GGHC SSM Credit 1: Site Management; GGHC FM Credit 6: IAQ Management Plan; GGHC CM Prerequisite 2: Chemical Management Policy and Audit; GGHC ES Credit 1: Environmentally Preferable Cleaning; GGHC ES Credit 3: Indoor Integrated Pest Management; GGHC FS Credit 8: Chemical Management for Food Services; and GGHC EP Credit 2: Toxicity Prevention in Purchasing.* Consider installing exterior entryway systems to minimize the amount of dust and particulates entering the facility.
- Design entryway systems to minimize barriers for people with disabilities, particularly technologies such as walkers and wheelchairs.
- Avoid plants, trees and bushes in building entrance areas that are varieties that yield berries, flowers and leaves that are likely to be tracked into the building.
- Provide a water spigot and electrical outlet at entryways for maintenance and cleaning activities.
- Assess current entryways to identify “high-traffic” entryways.
- Adapt entryway cleaning strategies and mat placement based on geographical climate of facility. (E.g. Facilities located in northern states may require additional walk-off mats outdoors due to snow, salt and ice.)
- Collaborate with the Infection Control Committee to identify opportunities through an Infection Control Risk Assessment (ICRA) for implementing air pressure relationships at major facility entryways that minimize entry of dust and particulates into the facility in accordance with GGHC v2.2 EQ Credit 5: Exterior Pollutant Source Control.

## ES Credit 2 continued

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### Entryway Systems

#### Resources

Environmental Building News, "Keeping Pollutants Out: Entryway Design for Green Buildings,"  
<http://www.buildinggreen.com/auth/article.cfm?fileName=101001a.xml>

Rona Fried, *Contracting Profits*, "Green-Dusting Methods Mean Better IAQ." November 2006.  
<http://www.cleanlink.com/cp/article.asp?id=5642&keywords=indoor%20air%20quality,%20iaq,%20green,%20rona%20fried>

National Floor Safety Institute, <http://www.nfsi.org/>

OneSource, "Five Features of Effective Green Cleaning Programs," [http://www.one-source.com/en/five\\_features.html](http://www.one-source.com/en/five_features.html)

1 point

ES Credit 3

**Indoor Integrated Pest Management****Intent**

Eliminate human exposure to physical and chemical hazards associated with pest management products and practices by employing environmental services operations that focus on pest prevention emphasizing non-chemical strategies that protect people from unnecessary exposure to pests and pesticides.

**Health Issues**

The health of building occupants and the health of the local ecosystem is directly affected by the use of chemical pesticides, including insecticides, herbicides, fungicides, and rodenticides. U.S. EPA states that, "economic benefits from pesticide use are not achieved without potential risks to human health and the environment due to the toxicity of pesticide chemicals."<sup>1</sup> Although the toxicity of individual pesticides vary, typical symptoms that can result from an acute pesticide exposure include nausea, dizziness, headaches, aching joints, mental disorientation, inability to concentrate, vomiting, convulsions, skin irritations, flu-like symptoms and asthma-like problems. Pesticides are linked to a wide range of chronic health problems including cancer, birth defects, genetic damage, neurological, psychological and behavioral effects, blood disorders, chemical sensitivities, reproductive effects, endocrine disruption, and abnormalities in liver, kidney, and immune system function. Studies show that children living in households where pesticides are used suffer elevated rates of leukemia, brain cancer and soft tissue sarcoma. Pregnant women, children, the chemically sensitive, elderly and chronically ill are at greater risk from pesticide exposure than others. Studies in laboratory animals raise concerns that patients taking certain medications may also have heightened reactions to some pesticides. Pesticides can affect the immune and nervous system and result in increased problems with allergies, asthma, and hypersensitivity to chemicals. Some pesticides also are suspected endocrine disruptors that can adversely affect hormone balance or disrupt normal function in the organs that hormones regulate. In health care environments, pesticides may impact the indoor air quality both in their exterior applications proximate to air intakes, and in the use of chemical pesticides for indoor pest control.

**Credit Goals**

*Note: This credit does not apply to Food Service areas. Visit GGHC FS Credit 8.1-8.2: Chemical Management for Food Services for more information.*

Develop an Integrated Pest Management (IPM) Program for managing pest control in the building interior that prioritizes safer alternatives to chemical pesticides while preventing economic and health damage caused by pests.

- Include the following attributes in the IPM Program:
  1. Methods of identifying pests and monitoring levels of infestation;

<sup>1</sup> Aspelin, A., et al. 1999. *Pesticide Industry Sales and Usage: 1996 and 1997 Market Estimates*. Office of Prevention, Pesticides and Toxic Substances. U.S. EPA. 733-R-99-001. Washington DC. Page 2.

## ES Credit 3 continued

### Indoor Integrated Pest Management

2. Stated action thresholds, or the level of infestation that can be tolerated;
  3. A list of preventive actions or corrective actions to be employed such as sanitation, structural repairs, and ongoing maintenance, establishing good soil health, mechanical and biological controls and cultural practices.
  4. Sound IPM practices that fulfill a supportive role with preventative health programs, minimize operational disruptions, and combine proactive measures with the application of least toxic pesticides—only as a last resort.
  5. An IPM controls approach: exclusion, access denial, and habitat modification/harborage. Only implement a least hazardous chemical control strategy when all non-chemical approaches have been exhausted and have failed to address the problem.
- Phase in implementation of the IPM program within one year. Facilities bound by current contracts that do not allow for the implementation of the IPM policy shall phase in policy implementation in accordance with contract renewal timelines.
  - Write the IPM Program into all pest control bid specifications, including the option to review any pesticide formulation and active ingredients prior to application.
  - The program shall eliminate the use of pesticides in any of the following categories except in case of immediate endangerment to health as a result of a pest situation. Use of any pesticide in the following categories must first be reviewed by infection control and safety:
    - Pesticides in U.S. EPA Categories I and II (i.e., those with highest acute toxicity);
    - Pesticides linked to cancer — U.S. EPA Class A, B, C carcinogens and chemicals known to the state of California to cause cancer under Proposition 65.
    - Pesticides that interfere with human hormones and/or cause birth defects or reproductive or developmental harm, e.g., those identified as reproductive or developmental toxins or suspected endocrine disruptors by the U.S. EPA Endocrine Disruptor Screening Program or chemicals known to California to be reproductive toxins under Proposition 65.
    - Pesticides in the carbamate (carbaryl, bendiocarb, etc.), organophosphate (diazinon, acephate, etc.) or pyrethroid (cyfluthrin, permethrin, etc.) chemical family and phenoxy herbicides (2,4-D, mecoprop, etc.); and,
    - Pesticide products that contain inert ingredients categorized by the U.S. EPA as “List 1: Inerts of Toxicological Concern” (dioctyl phthalate, formaldehyde, hydroquinone, isophorone, nonylphenol, phenol, and rhodamine).
  - The plan shall include a communication strategy to provide notification of the IPM system. The notification shall be provided directly to all building occupants. Ensure that clinical staff is notified. The program shall incorporate “Universal Notification,” which requires advance notice not less than 72 hours under normal conditions and 24 hours in emergencies before a pesticide, other than a least toxic, non-volatile pesticide is applied in a building or on surrounding grounds that the building maintains. The notice shall include:
    - A description of the Integrated Pest Management system and a list of all pesticides, including any least toxic pesticide that may be used in the building as part of the Integrated Pest Management system;



## ES Credit 3 continued

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### Indoor Integrated Pest Management

- The name, address, and telephone number of the contact person for IPM questions or concerns (responsible party);
- A statement that the contact person is responsible for maintaining the product label and material safety data sheet (MSDS) of each pesticide used in the building and that the label or MSDS is available for review upon request, and that the contact person is available for information and comment.
- Clarify to hospital staff that the responsible department (normally Environmental Services) be contacted first in the case of any pest sightings—contractors or health agencies should only be contacted through responsible department/contact person.
- Pesticide Applications
  - Ensure that any pesticide applicator on the hospital campus is licensed by the state, certified to handle the pest control products being used and utilizes appropriate personal protective equipment.
  - Ensure that all pesticide products to be used in the building are reviewed by Infection Control and Safety before use.
  - The IPM plan shall address under what circumstances an emergency application of pesticides in a building or on surrounding grounds being maintained by the building can be conducted without complying with the above provisions. Universal Notification strategies for pesticide application still apply under emergency applications. In addition, ensure that occupants and janitorial workers are notified within 24 hours of the pesticide application.

## ES Credit 3 continued

### Indoor Integrated Pest Management

#### Suggested Documentation

- Compile and annually review the Integrated Pest Management (IPM) Program developed in accordance with Credit Goals.
- Compile documentation of the phase-in of the IPM program including the inclusion of IPM requirements in all pest control bid specifications, in accordance with Credit Goals. Demonstrate that the Integrated Pest Management Program has been followed for a minimum one-year period.
- Compile and annually update a list of all pesticide products that have been reviewed and approved for use in emergency situations.
- Publicly display the IPM Program's communication strategy. Update annually.

#### Reference Standards

State of California. Proposition 65, [http://www.oehha.org/prop65/prop65\\_list/Newlist.html](http://www.oehha.org/prop65/prop65_list/Newlist.html)

U.S. Environmental Protection Agency (EPA) Endocrine Disruptor Screening Program (EDSP), <http://www.epa.gov/endo/>

U.S. Environmental Protection Agency (EPA) Class A, B, C Carcinogens, <http://www.epa.gov/pesticides/carlist/index.html>

U.S. Environmental Protection Agency (EPA), Inert Ingredients of Pesticide Products, "List 1: Inerts of Toxicological Concern," <http://www.epa.gov/opprd001/inerts/fr54.htm>

U.S. Environmental Protection Agency (EPA), Pesticides: Label Review Manual, <http://www.epa.gov/oppfead1/labeling/lrm/chap-07.htm>

#### Potential Technologies & Strategies

- **Credit Synergies:** *Coordinate implementation of this credit with GGHC IO Prerequisite 1: Integrated Operations & Maintenance Process; GGHC SSM Credit 1: Site Management; GGHC FM Credit 6: IAQ Management Plan; GGHC CM Prerequisite 2: Chemical Management Policy and Audit; GGHC ES Credit 1: Environmentally Preferable Cleaning; GGHC ES Credit 2: Entryway Systems; GGHC FS Credit 8: Chemical Management for Food Services; and GGHC EP Credit 2: Toxicity Prevention in Purchasing.*
- Integrated Pest Management (IPM) is a coordinated approach to pest control that seeks to prevent unacceptable levels of pests by the most cost-effective means with the least possible hazard to building occupants, workers, and the environment. The focus of IPM is on non-chemical prevention of pest problems. IPM emphasizes consideration of all management options. Preferential management methods include cultural, mechanical, physical, and biological controls, with a least hazardous pesticide used only as a last resort.

## ES Credit 3 continued

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### Indoor Integrated Pest Management

- “Least toxic” or low risk pesticides refers to those that have low or no acute or chronic toxicity to humans, affect a narrow range of species, and are formulated for application in a manner that limits or eliminates exposure of humans and other non-target organisms. Examples include products formulated as baits (e.g., boric acid), pastes or gels which do not, insecticidal and herbicidal soaps; and microbial pesticides (e.g., *bacillus thuringiensis (B.t.)* formulated from fungi, bacteria, or viruses that are only toxic to specific pest species but harmless to humans, and natural substances such as corn gluten meal. See EPA website for list of pesticides (<http://www.epa.gov/pesticides/ipm/>).
- Designate an IPM Coordinator (or other title) for the facility to serve as point of contact for contract pest service provider. The IPM Coordinator should be consulted prior to any and all pesticide applications and should meet regularly with pest management service provider(s) to review state and operation of IPM for the facility.
- Develop a plan for training of all hospital staff on pests, pesticides, and their role in the facility IPM program in coordination with GGHC IO Credit 1: Education: Staff, Patient and Community Environmental Sustainability Education.
- Basic IPM strategies include maintenance and repair of the basic structural integrity of the building, including:
  - Design and construct buildings to be as pest resistant as possible and maintain them well. Ensure that building roofs are included, that nets for bird/pigeon activity are checked on a regular basis, that roof parapets and caps are sealed, and that any other devices on the roofs such as traps or bait stations are placed at documented locations and regularly checked.
  - Eliminate cracks and holes to keep pests out. Lightly dust gaps between walls and other voids with boric acid before closing them up. Inspect the grounds area around buildings and fill burrows with pea gravel.
  - Ensure that devices such as bait stations placed in outside areas are locked, secured, clean and in good working order. Rodents do not like dusty and unclean bait stations.
  - Use physical barriers to block pest entry and movement (such as door sweeps, screens at chimneys and air intakes, doors and windows).
- Implement and enforce sanitation procedures to limit pests’ access to food and drink. Address leaky faucets, condensation on pipes, and all edibles. Store refuse in tightly sealed containers, and in controlled areas of the building. Clean tipper trucks and other waste conveyance equipment regularly to minimize pests.
- If using an outsourced contract, ensure IPM policy is included in all pest control bid specifications. Invite the contractor to provide onsite training on prevention and maintenance for in-house staff. Ensure the contractor is licensed by the state and has liability insurance.
- Consider contracting with pest control companies that meet 100% of the requirements for IPM certification.

## ES Credit 3 continued

### Indoor Integrated Pest Management

#### Resources

##### *Preparing IPM programs and Examples*

- American Society of Healthcare Environmental Services (ASHES), Recommended Practice Series: Integrated Pest Management. American Society for Healthcare Environmental Services of the American Hospital Association. Chicago, IL. 2005.
- Beyond Pesticides, <http://www.beyondpesticides.org>
- Beyond Pesticides and Health Care Without Harm, Healthy Hospitals, Controlling Pests without Harmful Pesticides, 2003, <http://www.noharm.org/pesticidesCleaners/issue>
- GreenShield Certification for Pest Control Companies, <http://greenshieldcertified.org/>
- Insect Management for the Interiorscape Environment, <http://ipm.ncsu.edu/InteriorScapes/insect.html>.
- Integrated Pest Management in Health Care Facilities Project, "Taking Toxics Out of Maryland's Health Care Sector: Transitioning to Green Pest Management Practices to Protect Health and the Environment," October 2008 <http://www.beyondpesticides.org/hospitals/index>.
- National Pest Management Association, <http://www.pestworld.org/>
- Practice Greenhealth Ten Step Guide to Implementing an Integrated Pest Management Program, 2006, <http://www.practicegreenhealth.org>
- U.S. Environmental Protection Agency (EPA), Integrated Pest Management for Schools: A How-to Manual, EPA 909-B-97-001, March, 1997 <http://www.epa.gov/pesticides/ipm/>.

##### *For Information on Pesticides and Health*

- EXTTOXNET Pesticide Information Profiles (PIP), <http://ace.ace.orst.edu/info/exttoxnet> .
- Federal Food Drug and Cosmetic Act (FFDCA), [http://www.law.cornell.edu/uscode/html/uscode21/usc\\_sup\\_01\\_21\\_10\\_9.html](http://www.law.cornell.edu/uscode/html/uscode21/usc_sup_01_21_10_9.html)
- Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), <http://www4.law.cornell.edu/uscode/7/ch6.html>
- Maryland Pesticide Network, Pesticides and Public Health: Critical Literature on Human Health 2001-2005, <http://www.mdpestnet.org/publications/MPN-Periodical7.zip>

## ES Credit 3 continued

### Indoor Integrated Pest Management

- Med-Chi, the Maryland State Medical Society and the Maryland Pesticide Network, Pesticide Related Illness: Identifying the Threat, Treating the Problem. DVD Training Set. <http://www.mdpestnet.org/dvd.htm>
- Pesticide Action Network, Pesticide Database, <http://www.pesticideinfo.org>
- Pesticide Registration Improvement Act (PRIA) of 2003, <http://www.epa.gov/opp00001/regulating/fifra.pdf#page=96>
- U.S. Environmental Protection Agency (EPA) Food Quality Protection Act of 1996, <http://www.epa.gov/pesticides/regulating/laws/fqpa/index.htm>
- U.S. Environmental Protection Agency (EPA), Recognition and Management of Pesticide Poisonings. 5<sup>th</sup> Edition, <http://www.epa.gov/oppfead1/safety/healthcare/handbook/handbook.htm>
- U.S. Environmental Protection Agency (EPA), Resource Conservation and Recovery Act (RCRA), <http://www.epa.gov/rcraonline/>
- U.S. Environmental Protection Agency (EPA), Pesticides: List of Restricted or Cancelled Uses, <http://www.epa.gov/pesticides/regulating/restricted.htm>

#### *For information on Alternatives to Pesticides*

- Beyond Pesticides, 701 E Street, SE, Suite 200 Washington, DC 20003, <http://www.beyondpesticides.org>.
- The Bio-Integral Resource Center (BIRC), PO Box 7414, Berkeley, CA 94704, <http://www.birc.org>.
- Northwest Coalition for Alternatives to Pesticides, PO Box 1393 Eugene, OR 97440-1393, <http://www.pesticide.org>.
- Organic Materials Review Institute (OMRI), Box 11558 Eugene OR 97440 USA 541-343-7600 541-343-8971 (fax)
- Washington Toxics Coalition, 4516 University Way, Seattle, WA 98105, <http://www.watoxics.org>.

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<sup>i</sup> United Kingdom. Statutory Instrument 2004 No. 1816. The Controls on Nonylphenol and Nonylphenol Ethoxylate Regulations 2004, <http://www.opsi.gov.uk/si/si2004/20041816.htm>