

# INTEGRATED PEST MANAGEMENT IN HEALTH CARE FACILITIES



## FALL 2008 NEWSLETTER

Welcome to the first edition of the *IPM in Health Care Facilities* newsletter, published by the Maryland Pesticide Network's Integrated Pest Management in Health Care Facilities Project. Through the Project, MPN, in partnership with Beyond Pesticides and in collaboration with the Maryland chapter of Hospitals for a Healthy Environment, enables and facilitates transition to safe pest management practices at Maryland health care facilities. This newsletter is part of the Project's outreach effort to engage Maryland health care facilities interested in effective pest control that protects patients, residents, and staff from unnecessary exposure to pesticides.

Facilities participating in the Project's Pilot Partnership Program agree that IPM that prioritizes pest prevention and non-chemical interventions to protect patients, residents and employees from the health hazards of both pests and pesticides is a key component to *Greening* their facilities. Under this IPM approach, only least-toxic pesticides are used for pest management, and only as a last resort. This approach is especially important for patient and long-term care populations that are especially vulnerable to chemical-intensive pest control methods that can cause or exacerbate the very diseases and conditions for which they are being treated.

This edition of the newsletter focuses on **bed bugs**, an emerging structural pest management issue for health care facilities that presents significant challenges for IPM programs. It also includes some tips on **fall landcare** that can reduce pest problems and the need for pesticides.

Save the Date: November 12th, 2008

~ Environmental Excellence in Healthcare ~

Promoting Healthy Patients, Employees and Communities in Maryland

Wednesday, November 12th

University of Maryland School of Nursing

655 W. Lombard Street, Baltimore, MD

This half-day conference will provide peer to peer learning opportunities as well as networking with vendors. If you are interested in attending or presenting details on green activities at your hospital, contact

Joan Plisko at 410-706-2107 or [plisko@son.umaryland.edu](mailto:plisko@son.umaryland.edu)

Web: [cms.h2e-online.org/stateprograms/current-programs/maryland-h2e/eehc](http://cms.h2e-online.org/stateprograms/current-programs/maryland-h2e/eehc)

## Guidelines for Bed Bug Monitoring, Monitoring and Intervention

### How Your Facility Can Prevent Bed Bugs

- As with all pest prevention under an IPM program, seal up cracks and crevices that allow entry and exit of pests, especially pest migration between rooms or units.
- Remove animal habitats (e.g., bird nests) and exclude animals from entry
- Remove debris and clutter from the facility (inside and out)
- Encase mattresses and box springs in bed bug-proof covers
- At long-term care facilities, inspect new residents' furnishings and luggage during initial move in, if possible, for any evidence of bed bugs.

### Monitoring is Key

- Regular IPM monitoring in general facility areas should include monitoring for bed bugs.
- Have housekeeping staff do a weekly check for signs of bed bugs
- In case of infestation, investigate the source of the problem

### Identifying Bed Bugs and Infestations

Adult bed bugs are reddish-brown, flat, elliptical, and between 1/8" to 1/4" wide, like a flattened apple seed. Hatchlings are about the size of a pin head and yellowish to reddish purple. Eggs are translucent white and very difficult to detect.



They are usually active at night, feeding on sleeping hosts. Reactions to bedbug bites can range from swelling and pain to nothing at all. As bed bug bites resemble bites from other insects (fleas, mosquitoes, etc.) infestation can rarely be identified solely by the appearance of bites.

### Where to Look

When not feeding, bed bugs often reside in cracks and crevices of bed frames/headboards, along the seams, folds, or 'buttons' of mattresses, and in box spring frames. Depending on the severity, up to half of an infestation may be away from beds. Bed bugs also may be found in:

- Cracks and crevices of the floor, plaster or ceiling moldings
- Window and door casings, moldings, cracks in plaster, picture frames
- Along the edge of carpeting
- Under loose wall paper, switch plates, and outlets
- In drapery pleats, the upholstery of sofas or chairs or the folds of clothes hanging in closets
- In the cracks and crevices of furniture (night stands, bureaus)
- Inside clocks, phones, televisions, smoke detectors, etc.



Bed bugs, including eggs and hatchlings, may be carried to non-infested areas on clothing, in luggage, in furniture, or in bedding. They can also migrate between units, apartments, and rooms. Rodents, birds, and bats can serve as hosts.

## What To Do If Your Facility Has a Bed Bug Infestation

**Do not treat all rooms/units in the facility.** Response to an infestation should be restricted to observed infestation and adjacent units.

**Pesticides are not a first line of response.** The first line of response is assessment and physical removal of bed bugs. Biweekly inspections and follow-up removal are recommended.

IPM experts question the value of treating bed bugs with pesticides that contain pyrethroids or pyrethrins, which can exacerbate respiratory illnesses and are linked to Parkinson's disease and other health effects. A 2006 article in Pest Control Technology magazine noted that pyrethroids "are not providing more than 50% mortality as residuals and as direct contact insecticides." In addition, resistance has been observed within generations of a single infestation. Borate or diatomaceous earth products are more effective and far less toxic to residents and staff.

### **An effective bed bug prevention/intervention program includes:**

- Careful inspection of furniture, linens or luggage brought into the facility
- Filling cracks, nooks or crannies in bed frames, floors, walls, baseboards and moldings
- Scrubbing infested surfaces with a stiff brush to dislodge eggs
- Physical removal of bed bug infestations and other non-chemical interventions

Non-chemical intervention for bed bugs involves vacuuming and steaming of dismantled bed frames, upholstered furniture, drapes, rugs, etc., that reaches all surfaces. Walls and floors must be thoroughly cleaned. Harborage areas require thorough treatment. **Vacuum** bags should be immediately discarded. Avoid brush attachments for vacuums as bugs and eggs can attach to the bristles. Scrape harborage areas with vacuum tools for best results. **Steam** temperatures of ~220°F kill bedbugs and eggs on contact. Commercial-grade, low-moisture "dry steam" systems work best. Larger brush heads are better as smaller diameter tips are less efficient and can emit excessive pressure, scattering bugs and eggs. **Freezing** with pressurized carbon dioxide (e.g., the Cryonite® system) offers a third method of non-chemical intervention.

**Least-toxic chemical controls.** The above treatments, spaced two weeks apart, should eliminate a bed bug infestation. If these are not enough, further intervention can include:

- Cleaning vacuumed areas with diluted borax (2 oz per quart of water)
- Residual treatment with fresh water diatomaceous earth (avoid products that combine pyrethrins/pyrethroids with diatomaceous earth)
- Wall void treatment with sodium borate or food-grade diatomaceous earth

### **Other steps the facility can take:**

- Bed bug-proof mattress and box spring covers safely contain infestations, protect new mattresses during treatment, and are necessary if a treated bed is kept.
- Heavily infested or damaged mattresses and bed frames should be discarded.
- Infested items for disposal should be bagged or wrapped.
- Launder bed linens and clothing in hot water (at least 120°F).
- "Dry Clean Only" items can safely be placed dry in a clothes dryer for 30 minutes.

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## FALL SEASON LANDCARE

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Practicing natural landcare, including an integrated pest management approach for turf and landscape, is an important step in greening your facility. Poor soil condition resulting from chemical practices that impair soil biology are a primary source of both harmful environmental health effects off-site AND turf and landscape management problems on-site. Did you know that:

- non-target impacts of herbicides, fungicides, and broad-spectrum insecticides destroy soil health and many beneficial microbes, fungi, insects and other organisms that can reduce the degree of intervention needed for quality turf and landscape
- foot traffic brings lawncare chemicals into your facility
- organic materials build 'deep' biology in the soil, while synthetic fertilizers lead to turf with shallow root systems
- building healthy soil has long-term benefits: in just a couple of seasons, turf will be deeper-rooted, and will remain greener in dry periods, and into the winter
- compost is a source of good microbes, and can be top dressed in a 1/3 inch layer on lawn, trees and shrubs

When selecting a landcare vendor or recontracting with an existing vendor, we recommend you insist on a turf and landscape program that builds soil health instead of relying on synthetic fertilizers, herbicides, fungicides, and insecticides to treat problems. Healthy soil can eliminate the use of pesticides.

Fall fertilization encourages root growth, promotes healthy soil and provides results you can see come spring. We recommend that your facility or your landcare vendor use a slow-release organically based fertilizer instead of conventional synthetic fertilizer that includes pesticides of concern to patients/residents at your facility.

*Happy Autumn and Thanksgiving to you all!*

