

StopPests in Housing Program

The goal of the StopPests in Housing Program is to use Integrated Pest Management (IPM) to address housing conditions that threaten human health and strengthen affordable housing communities. IPM is the coordinated use of pest and environmental information with available pest control methods to prevent unacceptable levels of pest infestation by the most economical means and with the least possible hazard to people, property, and the environment (EPA, 2000). The StopPests Program is run by the Northeastern IPM Center at Cornell University with funding from an interagency agreement between HUD and USDA.



Trained Properties

StopPests promotes IPM by providing free online resources and IPM consulting to affordable housing providers. We reach the public through our website, presenting at conferences, running webinars, social media, and one-on-one coaching.

Participating housing providers pick a pilot property; complete an initial program questionnaire; work with an StopPests IPM expert to set program goals; and accomplish the goals at the pilot site with coaching and resources from StopPests. After implementing IPM, housing providers report

- Increased communication and cooperation among staff, contractors, and residents;
- Reduced pesticide applications; and
- Fewer pests.

Accomplishments: 2007-Present

- Networked affordable housing providers with IPM and healthy housing professionals from government, industry, and universities
- Worked with 34 public housing authorities on their IPM programs
- Presented the *IPM in Multifamily Housing Training* to 832 trainees
- Presented on IPM at 24 housing and pest management conferences
- Developed many resources specifically for the housing audience

Resources for Affordable Housing

- Recorded webinars
- Case studies of IPM in housing
- *IPM in Multifamily Housing Training* curriculum
- *The Tenant's Role in IPM* video
- *IPM: A Guide for Affordable Housing*
- Template *IPM Plan for Bed Bugs*
- Sample newsletter articles (available through the blog)
- Model policy and contract language
- Direct access to IPM experts

Since 2007, the StopPests in Housing Program has maintained StopPests.org, presented at 34 professional meetings and conferences, recorded two webinars, run the IPM in Multifamily Housing Training 36 times, and worked with 34 committed public housing authorities on their efforts to implement IPM. In 2012, a new statement of work expanded the StopPests Program to include all HUD-subsidized affordable housing. We welcome any new connections and the opportunity to help affordable housing providers StopPests in Housing!

StopPests Offerings

- Networked resources at StopPests.org and social media sites
 - Relevant news and new resources
 - Current funding and training opportunities
 - Free webinars and recordings on technical pest management topics
- Conference presentations
- Copies of the IPM Guide, resident training DVDs, and sample IPM starter kits
- IPM implementation consultation and training for committed pilot sites (see below)

Consultation & Training Process

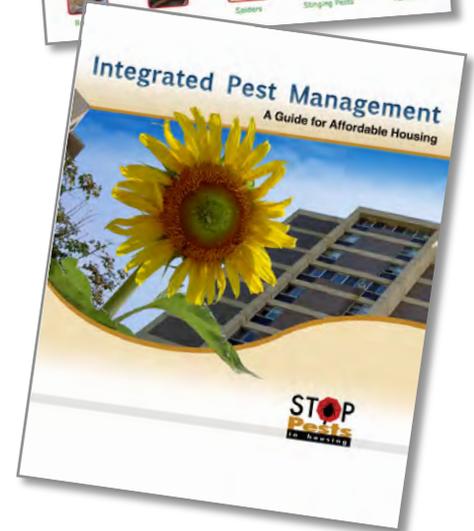
1. Obtain buy-in from housing management
2. Pick a pilot site (~100 units and an enthusiastic property manager)
3. Name an IPM Coordinator
4. Management and the IPM Coordinator sign a commitment
5. Relevant staff members complete a questionnaire about pest management at the pilot site
6. StopPests consultant makes suggestions for implementation
7. IPM Coordinator, StopPests consultant, and other parties set IPM goals and timelines
8. Pilot site develops capacity to implement training recommendations
9. StopPests runs an on-site training at the pilot site (www.stoppests.org/ipm-training/the-training-day)
10. The IPM Coordinator makes sure the housing community continues to work on IPM goals
11. The IPM Coordinator stays informed of continuing education opportunities through www.StopPests.org training opportunities page
12. Communicates success stories to other housing providers

Contact us today to StopPests in Housing!
stoppests@cornell.edu 🐜 607-220-6417

For All

Housing communities, pest management professionals, government officials, university-based programs, cooperative extension, and non-profits with initiatives related to asthma, healthy housing, or pest management

- IPM in Multifamily Housing Training Presentations
www.stoppests.org/ipm-training/training-materials
- IPM: A Guide for Affordable Housing
www.stoppests.org/guide
- Case studies of IPM in affordable housing
www.stoppests.org/success-stories/case-studies
- Pest solutions pages with pest-specific networked resources
www.stoppests.org/pest-solutions
- Frequently asked questions
www.stoppests.org/frequently-asked-questions



For Management

- Sample language
www.stoppests.org/what-is-ipm/using-ipm/#policy
- Recommendations for hiring a professional
www.stoppests.org/what-is-ipm/using-ipm/#hiring
- Funding opportunities
www.stoppests.org/what-is-ipm/funding-sources
- Training opportunities
www.stoppests.org/ipm-training/training-opportunities
- Recorded webinar on IPM for affordable housing
www.stoppests.org/ipm-training/training-opportunities/stoppests-webinars

For Maintenance

- Recorded webinar on taking bed bug control in-house
www.stoppests.org/ipm-training/training-opportunities/stoppests-webinars
- IPM recommendations for construction, pest-proofing, and renovation
www.stoppests.org/what-is-ipm/using-ipm/#maintenance

For Resident Support/Residents

- How to do IPM in the home of someone with hoarding
www.stoppests.org/working-with-residents/help-with-housekeeping/strategies-to-help-residents-with-housekeeping
- The Tenants' Role in IPM DVD
www.stoppests.org/working-with-residents/residents-briefing-video
- Sample newsletter articles
www.stoppests.typepad.com/ipminmultifamilyhousing/newsletter-article



Template Bed Bug Plan

Last Updated: **INSERT DATE**

Our property is committed to managing pests using integrated pest management (IPM). IPM includes early detection of new infestations through regular inspection and monitoring, preventing pests by exclusion, design, and good sanitation, and taking appropriate control actions when necessary. Control actions may include cleaning and removing pests with a vacuum or trap. IPM principles are implemented by the most economical means and with the least possible hazard to people, property, and the environment.

To successfully eradicate bed bugs, we need to work together. We understand the following about property-wide bed bug control:

- Although bed bugs are not known to transmit blood-borne diseases, they stress people and can cause skin infections and allergic reactions. The Centers for Disease Control and Prevention (CDC) and the Environmental Protection Agency (EPA) classify bed bugs as a pest of public health significance.
- There should be no shame associated with having bed bugs in an apartment. Although clutter makes it more difficult to eradicate bed bugs, cleanliness cannot prevent the problem from occurring. Once an infestation has been identified, we will take steps to eliminate it and prevent it from spreading.
- Early detection and intervention is the goal of the IPM program. To reach this goal, we will inspect entire buildings with known infestations and monitor for pests in all rooms every six months. In buildings without infestations we will inspect and check/replace monitor devices once a year. This process will involve asking residents and staff questions, visually inspecting, placing monitors, and possibly using bed bug-detecting canines.
- Effective treatment requires the cooperation of residents, property staff, and the pest management professional (PMP). We will work with a PMP to offer a minimal prep approach to bed bugs. If tenants cannot prepare for treatment, we may need to reach out to family or local support groups.
- Many people don't understand what must be done to eradicate bed bugs. If you feel that a resident, contractor, or property manager isn't handling the situation properly, suggest that they read through this document and view the suggested resources.
- Management will make the following available for residents:
 - ClimbUp Insect Interceptors (or other monitoring devices with research proving that they work)
 - Rip resistant mattress and box spring encasements
 - Plastic bags for furniture removal

For bed bugs, we will follow the IPM plan detailed below.

PREVENTION

- **Internal outreach efforts:** We educate our housing community about bed bugs. To ensure material is science-based and correct, management consults with bed bug expert **INSERT ENTOMOLOGIST NAME**. Information includes pictures of bed bugs, where they like to hide, how to avoid bringing bed bugs home, and what residents should do if they find a bed bug. The following are used to deliver the information:
 - Articles in the newsletter
 - A video and information on IPM shared during move-in and at annual re-sign
 - Flyers delivered to residents
 - Posters in common areas including laundry rooms
 - Training sessions conducted by **INSERT TRAINER OR COMPANY NAME** for staff and residents.
- **External outreach efforts:** An infestation of bed bugs can begin from any number of sources. In multifamily housing, common sources may include:
 - used furniture,
 - friends and family who are visiting or hosting residents; and
 - visiting professionals, such as cleaning contractors and home health aides.To reach these various sources of bed bugs, we educate people in our community associated with these sources on how to avoid spreading bed bugs. The following are used to deliver the information:
 - Flyers delivered to agencies, residents, and visitors
 - Posters in common areas where visitors travel
 - Training sessions conducted by **INSERT TRAINER OR COMPANY NAME** for staff and residents to which professionals outside the property are invited
 - Local mass media
- **Unit turnover and move-in procedures:** Staff and contractors working in vacant units inspect for bed bugs on items left by the former resident, around the unit, and behind fixtures, such as baseboards. Admission staff asks new residents about any previous exposure to bed bugs and provides information on how to limit the chance of bringing bed bugs to the property. Housing is not to be denied because of previous bed bug exposure, but management works with the resident and a PMP to ensure belongings are moved into the new home without bed bugs. Bed bug monitors are offered to the resident at move-in. An inspection is scheduled within 90 days of move-in to inspect housekeeping and pest monitors.

- **Disposing of large items:** Only items specified by the PMP servicing the unit should be discarded. **In most cases, disposal of furniture is NOT recommended.** Residents should wrap infested items in plastic before moving them out of the unit and should destroy the items once they are outside, to prevent others from retrieving infested items and bringing them home. Plastic wrapping material is available from the main office. Any large item left outside for trash pick up is considered infested and will be promptly removed from the property. Property staff will destroy; items on the curb using a utility knife or other means.
- **Reducing the likelihood of bed bugs in common areas:** It is difficult (but not impossible) for bed bugs to climb smooth surfaces like plastic and metal. Furniture in common areas, including seats used by residents in the main office, are made of plastic or metal to reduce the likelihood that the furniture will hide bed bugs. Monitors are installed where possible and checked during routine pest inspections. Numerous plastic storage containers are present in common areas. Each resident is to place his or her personal belongings, such as a coat and bag, into an individual storage container during meetings. Remember that everyone is at risk for getting bed bugs.
- **Preventing spread by property staff:** When possible, staff meets with residents in common areas where plastic or metal furniture is available. If office staff must meet with a resident in a unit, staff brings only essential items into the unit and will not sit on, or set items on, upholstered furniture. If maintenance staff must move infested items in a unit, they may wear booties and a disposable suit. They should remove and dispose of the protective clothing immediately upon completing work in the unit.

EARLY DETECTION

- **Reporting bed bug evidence:** Residents, staff, and contractors must immediately report any bed bugs or evidence of bed bugs anywhere on the property to **INSERT WORK ORDER NUMBER OR OTHER SITE-SPECIFIC CONTACT.**
- **Bed bug inspections:** Common areas such as laundry facilities, lobbies and community rooms are visually inspected by **INSERT PEST CONTROL COMPANY NAME** as part of the regular service. The PMP visually inspects bedrooms as part of the **INSERT FREQUENCY OF SERVICE** routine service. **INSERT FREQUENCY OF CANINE USE,** bed bug-detecting canines are used to inspect each unit. At a minimum, a PMP or qualified property staff member will inspect each unit and check the monitoring devices installed.
- **Bed bug monitoring:** ClimbUp Insect Interceptors are placed under each leg of beds and upholstered furniture. They capture bed bugs trying to get to or from the item. If no bed frame is present, simply place the monitors on the floor near the bed. Residents may obtain ClimbUp Insect Interceptors from the office.
- **Making inspection easier by using mattress/box spring encasements:** A snug fitting fabric mattress encasement on both the mattress and box spring protects the mattress and keeps bed bugs out of the interior of box springs (which is very hard

to inspect and treat). Residents may obtain encasements at the main office. If the resident has a bed frame, he or she should pad sharp edges that might tear the encasement. Once installed on the mattress, residents should use duct tape to tape over the zipper pull to ensure that it remains fully closed. Beds must be “made into islands” to the extent that the room and furniture permit: keep the area under the bed free of clutter and pull the bed or mattress at least 10 inches away from all walls and bedside furniture. Bed skirts are discouraged. Although not required, light-colored bedding will make inspection easier.

- **Encouraging compliance with reporting pests:** A bed bug infestation can be stopped quickly and with minimal burden if all members of the IPM team (housing, residents and the PMPs) are involved early in the infestation. To promote resident compliance with inspecting units and reporting infestations, we will not charge a resident for pest control or ask him/her to discard belongings unless it is absolutely necessary for effective treatment. If a resident does not comply with the PMP’s preparation instructions resulting in the PMP not being able to treat the unit, a service charge of \$ **INSERT CHARGE** is billed to the head of household.

DOCUMENTATION

- **Identifying trends:** To better track the spread of bed bugs throughout our community, plan bed bug treatments, and gauge the success of our bed bug management program, bed-bug-specific records will include inspection findings, education efforts, and treatment details. The records are kept in the work order system and analyzed by the property manager at least two times a year to identify building-specific patterns of infestation. The work order system should include information from the PMP’s service report, which includes the following for each unit:
 1. Unit access
 2. Pest type(s)
 3. Degree of infestation(s)
 4. Housekeeping
 5. Compliance with preparation instructions
 6. Control measures taken
 7. Time in and time out

TREATMENT

- **Confirming infestation:** Before any treatment is scheduled, live bed bugs must be found and identified by trained staff or a PMP. Many pests can be mistaken for bed bugs.
- **Involving a qualified PMP:** Once an infestation is confirmed, the PMP is called to inspect and possibly treat the infested unit and all adjacent units within one week. Property staff works with both the PMP, resident and the resident’s family

or support service provider to ensure that everyone involved understands the preparation instructions (if any), any of the resident's medical issues that may impact the treatment plan and how to prevent future infestations. All expenses for the PMP's work is paid for by management unless a charge is incurred because the PMP was unable to service the unit due to resident refusal of service or failure to follow preparation instructions.

- **Planning the treatment:** After inspecting the infested unit and (when an active infestation is found) all adjacent units, the PMP proposes a treatment plan, including pesticide product choice (if needed) to the property manager for approval. Treatment plans are approved after considering the burden on the resident, cost of service, and risk to people, property, and the environment.
Bed bug treatments: A bed bug treatment always requires at least two visits: the first is to inspect, plan treatment, and possibly do some treatment; the second is to follow up, kill emerged nymphs, or confirm bed bug control. More often, treatment requires three or more visits and may take months. The less team members cooperate, the longer the treatment will take. Control is defined as seeing no live bed bugs and the resident not reporting any new bites or sightings. Elimination is considered to be a 45-day period of control.
Discouraging use of store-bought pesticides: Over-the-counter sprays and foggers are NOT effective for bed bug control. A licensed PMP applies all pesticides targeting bed bugs.



**U.S. Department of Housing and Urban Development
Office of Public and Indian Housing**

SPECIAL ATTENTION OF:

Regional Directors; State and Area
Coordinators; Public Housing Hub
Directors; Program Center Coordinators;
Troubled Agency Recovery Center Directors;
Special Applications Center Director;
Administrators; Offices of Native American
Programs; Public Housing Agencies; Public
Housing; Housing Choice Voucher/Section 8;
Tribally Designated Housing Entities;
Indian Tribes; Resident Management
Corporations

NOTICE: PIH-2011-22

Issued: April 26, 2011

Cross Reference:

24 CFR 903.7(e) (2)

24 CFR 990.165

7 U.S.C. 136r-1 Integrated Pest
Management

This Notice Supersedes

PIH Notice 2009-15, PIH Notice
2008-24, PIH Notice 2007-12

Subject: Promotion of Integrated Pest Management (IPM) as an environmentally-sound, economical and effective means to address a major resident concern.

1. **Purpose.** The purpose of this Notice is to promote and encourage the use of IPM by Public Housing Authorities (PHAs), Indian tribes, Tribal Designated Housing Entities (TDHEs), and owner/agents providing assistance through the HCV program. This notice provides guidance to Public Housing Authorities (PHAs) on the benefits of IPM, additional technical assistance and training opportunities for PHAs. Pest management is integral to the provision of safe and sanitary housing. In accordance with 24 CFR 903.7 (e) (2), PHAs must include in their PHA plans a description of any measures necessary for the prevention or eradication of pest infestations. IPM is an ecological approach using an array of methods to prevent and control pests with reduced reliance on pesticides. Procedures contained within this notice remain in effect until superseded by subsequent HUD Directive or guidance.
2. **Applicability.** This notice applies to PHAs administering the public housing and project based Section 8 program, and may be of interest to Indian tribes/TDHEs as well as owners/agents providing assisted housing through the Housing Choice Voucher (HCV) Program. The decision to use IPM techniques in their ongoing pest control effort is under PHA, Indian tribes/TDHE discretion. 24 CFR 990.165(a) covers cost associated with Project Expense Level (PEL) such as maintenance expenses. IPM is a maintenance expense.
3. **Background.** The goal of IPM as defined by the Environmental Protection Agency (EPA) is to control pests by the most economical long term means, and with the least possible hazard to people, property, and the environment. To undertake IPM, project managers should be committed to ongoing or continuous monitoring and record keeping, educational outreach to residents and staff as well as implementing good communication strategies between residents and building managers. IPM methods include: restricted pest access to

food/water; vigilant sanitation and waste management; mechanical control; physical barriers; structural maintenance; and, where necessary, the judicious use of pesticides.

4. **Fundamentals of IPM.** IPM efforts must involve PHA staff, contractors, residents, and include:
 - a. Communicating the PHA's IPM policies and procedures to be provided in the appropriate format to meet the needs of all residents including persons with limited English proficiency and in formats that may be needed for persons who are visually or hearing impaired. This applies to administrative staff, maintenance personnel, and contractors as well.
 - b. Identifying the environmental conditions that lead to pests and educating residents.
 - c. Identifying pests and immediately reporting the presence of pests.
 - d. Establishing an ongoing monitoring and record keeping system for regular sampling and assessment of pests, surveillance techniques, and remedial actions taken, include establishing the assessment criteria for program effectiveness. This is a highly effective preventative measure that can help reduce the possibility of a pest infestation outbreak.
 - e. Determining, with the involvement of residents, the pest population levels – by species – that will be tolerated, and setting thresholds at which pest populations warrant action.
 - f. Improving waste management and pest management methods.
 - g. Selecting the appropriate pesticides and insecticides to use. Some residents may suffer from Multiple Chemical Sensitivity or other Environmental Illnesses.
 - h. Ongoing efforts to monitor and maintain structures and grounds (e.g., sealing cracks, eliminating moisture intrusion/accumulation) and adding physical barriers to pest entry and movement.
 - i. Developing an outreach/educational program to ensure that leases reflect residents' responsibilities for: (1) proper housekeeping, which includes sanitation upkeep and the reduction of clutter, trash removal and storage, (2) immediately reporting the presence of pests, leaks, and mold, (3) cooperating with PHA specific IPM requirements such as obtaining permission of PHA management before purchasing or applying any pesticides, and (4) avoiding introduction of bed bugs and other pests into buildings on used mattresses and other recycled furniture. See "Preventing and Getting Rid of Bed Bugs Safely," New York City Department of Health and Mental Hygiene <http://www.nyc.gov/html/doh/downloads/pdf/vector/bed-bug-guide.pdf>
 - j. Check with local health department to determine if your state has laws for re-used furnishings.
 - k. The judicious use of pesticides when necessary, with preference for products that, while producing the desired level of effectiveness, pose the least harm to human health and the environment. Residents should notify PHA management before pesticides are applied.
 - l. Providing and posting "Pesticide Use Notification" signs or other warnings.
5. **Health Concerns.** Pests may adversely impact the health of residents and contribute to worsening some diseases, such as allergies and asthma. Cockroaches can cause asthma in children and can transfer disease-causing organisms to food and surfaces they contaminate. Rodents, such as mice and rats, carry disease, can trigger asthma attacks and even cause fires by gnawing through electrical wires. Although bed bugs are not known to transmit infectious diseases, their bites can lead to secondary infections. Bed bugs can cause

emotional distress and sleep deprivation for residents as well. Bed bug infestations can spread quickly and must be treated aggressively. All pest control methods are targeted to protecting the health of residents and staff. Although applying pesticides may be effective in eliminating pest populations, many of these chemicals are associated with health and/or environmental risks, and their use should be minimized if alternative methods exist. This is especially important in buildings housing vulnerable age groups such as children or the elderly and in buildings housing residents with compromised immune systems or who may suffer from Multiple Chemical Sensitivity and other environmental illnesses. Therefore, IPM offers the potential to ensure efficacy of pest elimination while protecting the health of residents, staff and the environment.

6. **Building.** Most of the effective methods of pest elimination, including ongoing repairs, erection of barriers, and monitoring, will extend the useful life of a building and as a result generate significant savings that could offset the costs of the pest control. Many of these non-application methods, including structural maintenance, and inspecting for and repairing leaking pipes and cracks in roofs, walls, and windows are effective in preventing moisture intrusion and accumulation. Additionally, IPM-conscious PHAs assess the need to install physical barriers to both pest entry and pest movement within every structure thereby reducing the spread of pest infestations.
7. **Implementation.** HUD promotes IPM as a pest control method. IPM effectively eliminates pests in safer and long term cost-effective ways than traditional pesticide treatments. IPM frequently has proven to be more effective in reducing pest populations than relying solely on broadcast pesticides. The Boston Housing Authority (BHA) experienced approximately one-third reduction in pest related work orders over multiple years in multiple sites. BHA has maintained this reduction and now uses IPM in all its BHA maintained properties. Continuation of the IPM program after initial development cost is considered preventative maintenance expense and is an eligible program activity under the Public Housing Operating Subsidy as codified at 24 CFR 990.165. Successful IPM requires resident participation through proper housekeeping, reporting of pest infestations, and trash removal. Residents can monitor pest populations and assist in identifying how to eliminate access to food and water for pests. Resident organizations must be prepared to assist residents who need help to follow the IPM policy. HUD encourages PHAs to partner with local pest management organizations.
8. **Procurement of IPM Services.** If a PHA uses an outside contractor for pest control, the PHA's pest control/IPM policies and procedures should be incorporated into the specifications or statement of work for the pest management contract. PHAs using an outside contractor are encouraged to use companies that are trained and certified to provide IPM services either through Green Shield certified (<http://www.greenshieldcertified.org/>) or Green Pro (<http://www.npmagreenpro.org/>). The PHA should also consider training for maintenance staff, residents, Resident Councils as well as PHA administrative staff who oversee housing developments or administer occupancy and rental duties such as unit housekeeping inspections.
9. **PHA Maintenance Staff.** If a PHA uses its own maintenance staff for pest management, proper training in the PHA's IPM procedures is essential. It is especially critical to be trained in the proper treatments methods PHAs can use when treating for bed bugs. The contract administrator for any pest management contract should be trained as well. Successful results rely upon proper implementation; training is therefore of critical

importance. IPM training is available at: <http://www.stoppests.org/> and <http://www.healthyhomestraining.org/ipm/training.htm>.

10. **Area of High Concern, Bed bugs.** As the number of bed bug infestations rise throughout the country, HUD is in the process of developing protocols to address this growing problem. HUD is addressing the unit inspection process as well as developing the tools necessary for PHAs to identify, treat and monitor the effectiveness of bed bug treatments in its portfolio. Identifying, reporting, treating and monitoring pest infestations are all critical components of IPM and are effective in addressing the bed bug problem.

11. **Reference Materials for Implementing IPM.** The below list of IPM practices does not constitute a HUD endorsement of any specific practice, but provides IPM ideas and practices that have been used to improve pest management while reducing unnecessary dependence on pesticides. HUD encourages PHAs, Indian tribes/TDHEs to share their policies, procedures, resident leases, and written case studies so that these may be published on the HUD website for others to read.

- a. National Center for Healthy Housing: <http://www.healthyhomestraining.org/ipm>
- b. Bed Bugs: “What’s Working for Bed Bug Control in Multi-family Housing”
http://www.healthyhomestraining.org/ipm/NCHH_Bed_Bug_Control_2-12-10.pdf
<http://pestworld.org/pest-world-blog/the-bed-bug-hub-one-stop-shop-for-bed-bug-information>
- c. National Pesticide Information Center: <http://www.npic.orst.edu/>
- d. Integrated Pest Management (IPM), A Guide for Managers and Owners of Affordable Housing, Boston Public Health Commission:
http://http://asthmaregionalcouncil.org/uploads/IPM/asthma_ipm_guide.pdf.
- e. U.S. Environmental Protection Agency:
 - i. General IPM information <http://www.epa.gov/opp00001/contolling/index.htm> housing): <http://www.epa.gov/pesticides/ipm>
 - ii. EPA staff contacts: <http://www.epa.gov/pesticides/about/contacts.htm#ipm>
 - iii. List of EPA IPM publications and instructions for ordering documents:
<http://www.epa.gov/oppfead1/Publications/catalog/subpage3.htm>
- f. Massachusetts Department Agriculture Resources – Building Managers and Landlords:
http://www.mass.gov/agr/pesticides/docs/CIB_Building_Managers.pdf
- g. HUD funded “Healthy Public Housing Project” conducted by the Harvard School of Public Health In Boston Public Housing, <HTTP://www.hsph.harvard.edu/hphi/>
- h. Bed Bug Fact Sheets in English and Spanish produced by Dr. Dini Miller,
<http://www.vdaacs.virginia.gov/pesticides/bedbugs-facts.shtml>

12. **PHA Case Studies On IPM Application.**

- i. Cuyahoga Housing Authority:
http://www.healthyhomestraining.org/ipm/Case_Study_Cuyahoga_10-20-07.pdf
- ii. Boston Housing Authority:
http://www.http://www.healthyhomestraining.org/ipm/casestudy_holgate.pdf
- iii. New York City Department of Health, Columbia University and the New York City Housing Authority: <http://www.beyondpesticides.org/dailynewsblog/?p=1604>

13. For further information contact Leroy Ferguson at (202) 402-2411 or email at Leroy.Ferguson@hud.gov or you can contact the nearest HUD Field Office of Public Housing

within your state. Indian tribes and TDHEs should contact the nearest HUD Office of Native American Programs. Locations of these offices are available on HUD's website at <http://www.hud.gov>.

/s/

Sandra B. Henriquez, Assistant Secretary for
Public and Indian Housing

Ants

Although ants are annoying when they come indoors, they can be beneficial by feeding on fleas, termites, and other pests in the garden. While spraying chemicals inside the house may seem effective, it won't prevent more ants from entering your home, because most ants live outdoors. Instead, focus efforts on excluding ants from entering buildings. Combine several methods such as caulking entryways, cleaning up food sources, and baiting when necessary. Avoid the use of pyrethroids (eg. bifenthrin and cypermethrin), especially on hard surfaces such as driveways, sidewalks, or around the foundation of buildings. These products pollute waterways.

Make your house less attractive to ants.

- ◆ **Caulk cracks and crevices that provide entry into the house.**
- ◆ **Store food in closed containers.**
- ◆ **Clean up grease and spills.**
- ◆ **Ant-proof kitchen garbage pails with sticky barriers such as petroleum jelly under the lip and place pet dishes in a moat of water.**
- ◆ **Remove or manage sweet food sources next to your house such as aphid-infested bushes and ripened fruit on trees.**
- ◆ **Keep plants, grass, and organic mulch at least a foot away from the foundation of buildings to reduce ant foraging and nesting.**

When ants invade your house:

- ◆ **Sponge up invading ants with soapy water as soon as they enter.**
- ◆ **Plug up ant entryways with caulk.**
- ◆ **Take infested potted plants outdoors and submerge pots in a solution of insecticidal soap and water.**
- ◆ **Clean up food sources by wiping up spills and placing food in tight-fitting containers.**
- ◆ **Rely on outdoor baits to control the ant colony.**
- ◆ **Insecticide sprays should not be necessary.**
- ◆ **If you hire a pest control company, ask them to use baits rather than perimeter treatments or monthly sprays.**



How baits work:

Pesticide baits attract worker ants, so they will take it back to the nest where the entire colony, including queens, may be killed. The pesticide must be slow acting, so workers won't be killed before they get back to the nest.

How to use baits:

Place baits near ant trails and nest openings. Prepackaged or refillable bait stations or stakes are safest and easiest to use. Active ingredients in baits may include boric acid/borate, fipronil, avermectin, sulfluramid, hydramethylnon, or arsenic trioxide. Replace baits when empty, and reposition them or try a different bait product if ants don't appear to be taking it. It may take 5 to 10 days to see fewer ants.

For more information, refer to the
Pest Notes: Ants at
www.ipm.ucdavis.edu.



argentine ant

Actual size $\frac{1}{6}$ of an inch.

Minimize the use of pesticides that pollute our waterways. Use non-chemical alternatives or less toxic pesticide products whenever possible. Read product labels carefully and follow instructions on proper use, storage, and disposal.

For more information about managing pests, contact your local Cooperative Extension office listed in your phone book or at www.csrees.usda.gov/Extension/index.html. If you have a question about choosing a pesticide, contact the National Pesticide Information Center at 1-800-858-7378 or via e-mail at npic@ace.orst.edu.

University of California
Statewide IPM Program
www.ipm.ucdavis.edu



www.StopPests.org

**What you use in your home affects
the health of those around you!**

Bed Bugs

Bed bugs are small, wingless insects that can feed on sleeping humans at night. These nocturnal insects hide along seams of mattresses, in box springs, or in cracks and crevices near sleeping areas. Eliminating an infestation requires removing or treating all infested material and monitoring to be sure bed bugs are gone.

Bed bug identification and biology.

- ◆ **Adults are small (about 1/5 inch), oval, and rusty red. Nymphs, or immature bed bugs, are smaller and lighter colored.**
- ◆ **Bed bugs feed only on blood and must have one blood meal prior to molting to the next, larger nymphal stage.**
- ◆ **Adults can feed every few days but can survive many months without food.**

What are associated health problems?

- ◆ **Bed bug feeding is painless. Victims usually remain asleep.**
- ◆ **Areas around bites may redden, swell, and itch. Some people have no reaction.**
- ◆ **Bed bugs are not known to spread diseases, but scratching bites can lead to infections.**

How does a bed bug infestation start?

- ◆ **People can carry bed bugs on luggage, clothes, bedding, furniture, or other objects and may pick them up in hotels.**
- ◆ **Hotels, homeless shelters, furnished apartments, and dormitories are most at risk.**
- ◆ **Second-hand mattresses and furniture can be a source.**

Detecting bed bugs.

- ◆ **Look for bed bugs, their dark fecal spots, and light-brown shed skins.**
- ◆ **Focus on mattresses, box springs, bed frames, and areas around the bed.**
- ◆ **Bed bugs like to hide. Remove bedding. Look in cracks, crevices, and holes. Turn furniture upside down and dismantle frames if necessary.**
- ◆ **Use a flashlight and magnifying glass.**

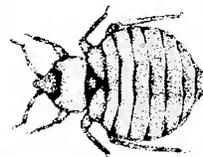


Remove or treat all infested materials as soon as you detect bed bugs.

- ◆ **Vacuum along mattress seams, baseboards, and other areas.**
- ◆ **Wash all bedding and clothing in hot (120°F) water and dry in a hot dryer.**
- ◆ **Consider steam cleaning.**
- ◆ **If possible, replace infested mattresses.**
- ◆ **Specially-designed mattress encasements may be helpful.**

Serious infestations may require insecticide treatment.

- ◆ **Hire an experienced pest control professional. They have access to the most effective products.**
- ◆ **Apply insecticides to cracks, crevices, baseboards, and bed frames but not directly to mattresses or bedding. Use special dusts for wall voids and other out-of-the-way spots.**
- ◆ **Insecticides alone will not control bed bugs. Remove infested materials, and seal hiding spots.**
- ◆ **Inspect after treatment to be sure bugs are gone.**



Adult bed bug (1/5 inch).

Minimize the use of pesticides that pollute our waterways. Use nonchemical alternatives or less toxic pesticide products whenever possible. Read product labels carefully and follow instructions on proper use, storage, and disposal.

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Cockroaches

Cockroaches thrive in warm environments that provide food, water, and shelter. Roaches hide in cracks, crawl spaces, and other dark places during the day and come out at night to feed. Pesticide sprays alone will not control roaches and are not usually required. Baits provide better control. You must integrate several strategies to make your home a less roach friendly environment. Thoroughness is essential for effective control.

Identify your cockroach species first:

- ◆ **Effective management options vary according to species.**
- ◆ **Cockroach traps provide an easy way to catch roaches for identification.**
- ◆ **Control practices for outdoor invaders (American, oriental roaches) and indoor residents (brownbanded, German roaches) differ.**
- ◆ **For help with identification, go to www.ipm.ucdavis.edu.**

Remove food and water sources:

- ◆ **Even tiny crumbs or liquids in cracks provide good food sources.**
- ◆ **Store food in sealed containers.**
- ◆ **Keep trash in containers with tight lids.**
- ◆ **Eliminate plumbing leaks.**
- ◆ **Vacuum cracks and crevices, and clean floors and counters daily.**

Remove roach hiding places:

- ◆ **Seal cracks and other openings to prevent invaders from the outside.**
- ◆ **Seal cracks in false bottoms of cupboards and other indoor hiding places.**
- ◆ **Seal or clean up other areas where you find roaches or their egg cases hiding.**
- ◆ **Remove old newspapers, boxes, and other clutter in kitchens and bathrooms.**
- ◆ **The oriental cockroach hides outdoors under ivy and other shelter. Check to see if you have this roach, and remove outdoor hiding places or use bait.**



Use traps to identify and track populations:

- ◆ **Traps are available in hardware stores.**
- ◆ **Place traps on the floor around edges of walls, in cupboards, and other places where you think roaches are foraging. Place bait stations at locations where you trap roaches.**
- ◆ **Check traps daily.**
- ◆ **Sticky traps with pheromones may provide some control of German cockroaches.**

Using chemicals to control cockroaches:

- ◆ **Avoid using foggers, bombs, or aerosol sprays. They just disperse populations.**
- ◆ **Boric acid powder blown into cracks, crevices, hollow walls, under refrigerators, or other undisturbed hiding places is very effective. (Allow 7 days or more to see an effect.)**
- ◆ **Bait stations containing boric acid, abamectin, fipronil, or hydramethylinon placed near hiding places can be effective if you remove other food sources. (Allow 7 days or more to see an effect.) Replace stations as needed as long as they are catching roaches.**
- ◆ **Insecticide sprays alone don't give long-term control. They aren't necessary if other methods such as baits and boric acid powder are combined with cleaning up and removing hiding places.**
- ◆ **Contact a professional pest control operator for very serious infestations, but be sure they use an integrated program as described above.**



German
cockroach
nymph



German
cockroach
adult

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Fleas

Fleas are particularly annoying to people and pets, especially during spring and early summer when their numbers tend to increase dramatically. The common flea in homes is the cat flea. Despite its name, it attacks both dogs and cats and also will bite humans. To keep fleas out of your home, control fleas on your pet and regularly clean pet sleeping areas.

On the pet:

Systemic flea control materials applied on the pet or in food are very effective. Remember to supplement pet treatments with regular cleaning of your home and periodic combing with a pet flea comb to detect new infestations.

- ◆ **Spot-on formulations are applied to the animal's coat, providing flea control for 1 to 3 months. Available from veterinarians or over-the-counter.**
- ◆ **Systemic flea control products, available from vets, are given as a pill or food additive. While they do not kill adult fleas, they prevent reproduction.**
- ◆ **Flea collars containing insect growth regulators (IGRs) give protection for up to 6 months on dogs and up to a year on cats. Be sure to choose collars containing methoprene or pyriproxyfen.**
- ◆ **Flea shampoos and soaps, powders and dusts, spray-on liquids, and dips are less effective and more hazardous to pets, people, and the environment than the three types of products above.**

In the yard:

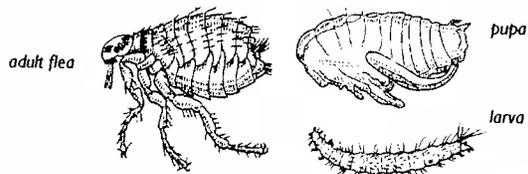
Outdoor treatment is rarely needed, but if your pet regularly sleeps outside and flea numbers are high, these areas can be treated with a spray containing pyriproxyfen. If possible, open sleeping areas to sunlight by removing low-hanging vegetation. Immature fleas are unlikely to survive in areas with exposure to sunlight.



Inside the home:

Regularly vacuum and launder areas where your pet rests to avoid flea buildup. If you have a major flea problem, treat your pet with one of the options on the front of this card and follow the steps below.

- ◆ **Locate heavily infested areas (usually where the pet rests) and concentrate treatment there.**
- ◆ **Wash throw rugs and pet bedding.**
- ◆ **Vacuum upholstered furniture, cleaning under cushions and in crevices.**
- ◆ **Vacuum carpets, especially beneath furniture.**
- ◆ **Use a hand sprayer or aerosol to treat all carpets and unwashable upholstered furniture with an insecticide that contains an IGR (methoprene or pyriproxyfen). This treatment kills larvae but not pupae, so fleas may continue to emerge for up to 2 weeks.**
- ◆ **During the next 2 weeks vacuum regularly to remove adult fleas that emerge from pupae. Do not reapply pesticides.**
- ◆ **Seal vacuum bags and discard them so fleas don't escape.**



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House Mouse

House mice are well-adapted to living in close contact with humans and thrive where food and shelter are abundant. They eat and contaminate food supplies and also can transmit disease. Their gnawing activities may damage structures or property. Manage them by cleaning up debris, removing food and shelter, eliminating entryways into buildings, or using traps or baits. High frequency electronic devices are not effective.

How to detect a house mouse infestation:

- ◆ Look for droppings, fresh gnaw marks, and tracks, which indicate areas where mice are active.
- ◆ Search behind boxes, in drawers, in garages, or around woodpiles for nests made of finely shredded paper or other fibrous material.
- ◆ Check for musky odors associated with mice.
- ◆ Mice are most active at night, but you can see them during daylight hours.

Discourage mice by removing food, water, and shelter and sealing entryways.

- ◆ Good housekeeping within buildings reduces shelter and food for house mice.
- ◆ Seal all structural cracks and openings larger than ¼ inch. Use wire screen or coarse steel wool that mice can't chew through.
- ◆ Ensure doors, windows, and screens fit tightly.
- ◆ Feed pets only the amount of food they will eat at a single feeding.
- ◆ Seal all food storage and garbage containers.
- ◆ Thin or remove plants next to or climbing up buildings, since house mice are excellent climbers.

Remove mice from your home by trapping.

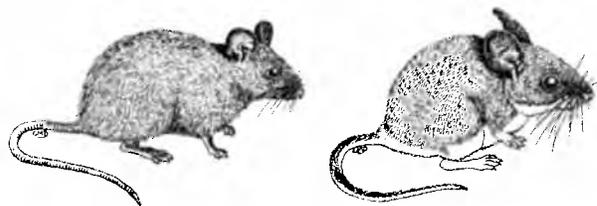
- ◆ Snap traps and glue boards are the safest and most economical.
- ◆ Place traps in secluded areas along walls, behind objects, in dark corners, and in places where you find droppings.
- ◆ Bury dead rodents or place them in plastic bags and put them in the garbage. Do not touch mice with your bare hands, and wash hands thoroughly after handling traps.



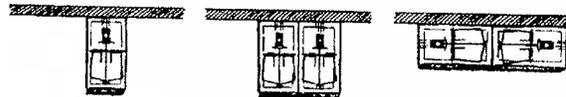
What about poison baits?

- ◆ Avoid using baits indoors. Mice can die in hidden places, create bad odors, and be difficult to locate. Seal buildings before baiting outdoors to prevent mice coming indoors to die.
- ◆ Baits generally take several days for effective control.
- ◆ Place baits in tamper-proof bait stations out of reach of children and pets. All rodent baits are toxic.

See Pest Notes: House Mouse at www.ipm.ucdavis.edu for complete instructions on carrying out these practices.



The house mouse (left) has almost no hair on its tail and no white markings. The carrier of the deadly hantavirus, the deer mouse (right), has a white underside, more hair on its tail, and is rare in homes.



Set traps with the trigger next to the wall. Increase your chance of success by setting two.

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Rats

Rats are some of the most troublesome and damaging rodents. They eat and contaminate food, garden produce, and fruit and transmit diseases to humans and pets. Manage rats by removing food and shelter, eliminating entryways into buildings, and trapping.

Indications of a rat infestation:

- ◆ Rat droppings in garages, storage buildings, attics, or around pet food containers.
- ◆ Rodent feeding damage on fruit/nuts in or falling from trees in your yard.
- ◆ Rat nests behind boxes, in drawers in the garage, or in woodpiles.
- ◆ Burrows beneath the garbage can, compost pile, or among garden plants.
- ◆ Rats travelling along utility lines or on fence tops at dusk.

Identify the rat: Is it a roof rat or a Norway rat?

- ◆ The stocky Norway rat builds burrows along building foundations, beneath rubbish, or in woodpiles. Indoors they tend to remain in basements or on the ground floor.
- ◆ Roof rats are agile climbers with a tail longer than their head and body. They usually live and nest above ground in shrubs, trees, or dense vegetation. Indoors they favor attic spaces, walls, false ceilings, and cabinets.

To get rid of rats, remove food, water, and shelter and seal entryways!

- ◆ Feed pets only the amount of food they will eat at a single feeding.
- ◆ Keep garbage, trash, and garden debris in receptacles with tight-fitting lids.
- ◆ Thin dense vegetation and create at least a 2-foot space between shrubs and between shrubs and buildings.
- ◆ Thin/remove climbing hedges from buildings.
- ◆ Remove tree limbs that are within 3 feet of a roof.
- ◆ Seal all cracks and openings in the house's foundation that are larger than 1/4 inch.
- ◆ Make sure doors, windows, and screens fit tightly.



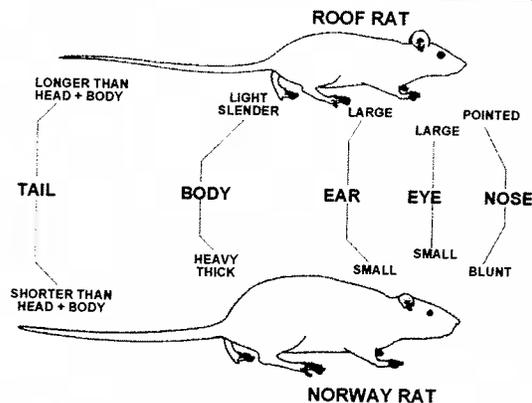
Remove rats from the home by trapping.

- ◆ Snap traps are the safest, most effective, and economical way to trap rats.
- ◆ For Norway rats, place traps close to walls, behind objects, in dark corners, and in places where rat droppings have been found.
- ◆ For roof rats, place traps in off-the-ground locations such as ledges, shelves, branches, fences, pipes, or overhead beams.

What about baits?

- ◆ Avoid using baits indoors, because dead rats create bad odors.
- ◆ Seal buildings before baiting outside to prevent poisoned rats from coming inside to die.
- ◆ Place baits in tamper-proof bait stations and secure them from children and pets.
- ◆ All rodent baits are toxic to pets.

Refer to Pest Notes: Rats at www.ipm.ucdavis.edu for more details on rat management.



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Yellowjackets

Yellowjacket wasps prey on other insects and also scavenge on human food and garbage. Yellowjackets defend their nests with stings, like other social wasps and bees, but also are more likely to sting if disturbed while foraging. Stings generally cause pain and short-term injury, but some people suffer severe allergic responses. Prevent injury by avoiding wasps and removing food sources. Trapping or nest treatment may reduce populations. Pesticides other than nest treatments usually are ineffective.

Make sure it's a yellowjacket.

- ◆ **Yellowjackets are ½ to 1 inch long with jagged, bright yellow and dark black stripes. Their narrow "waist" is barely visible. Other common wasps do not scavenge on food. Yellowjackets nest in holes in the ground, inside wall cavities, or in hanging nests enclosed in grey paper.**
- ◆ **Honeybees are less brightly striped than yellowjackets and are hairier. Usually they aren't attracted to food (although sometimes to sweets) and are unlikely to sting unless trapped or stepped on. They usually nest inside of cavities in trees or houses.**
- ◆ **Paper wasps have long slender waists, build open paper nests under eaves, and rarely are aggressive.**
- ◆ **Mud daubers are dark colored and thread-waisted, build small, hard mud nests, and rarely sting.**

Keep your cool to avoid stings.

- ◆ **If a wasp lands on you, don't swat it or run. Wait for it to leave, or gently brush it away.**
- ◆ **Do not disturb nests. Wasps flying from a hole in the ground or a building indicate a probable nest.**

Remove attractive food sources.

- ◆ **Keep foods, including pet food, covered or indoors.**
- ◆ **Cover sugary drinks when outdoors. Yellowjackets may crawl into soda cans.**
- ◆ **Keep garbage in sealed cans and empty regularly.**
- ◆ **Pick up and dispose of ripe fruit.**



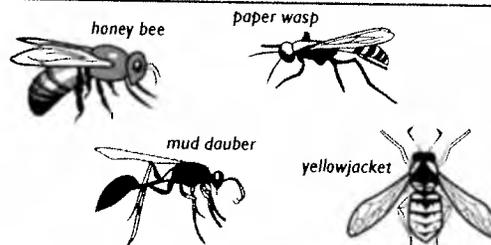
Use traps to reduce yellowjackets locally.

- ◆ **Hang yellowjacket lure traps out in spring to catch nesting queens. Traps may reduce but not eliminate populations and work only on some species.**
- ◆ **Make a homemade trap with a meat bait hung on a string just above soapy water.**
- ◆ **Place traps a distance away from areas, such as picnic tables, where people congregate.**

To protect yourself and your family, consider calling a professional if you find nests.

- ◆ **Ask your Mosquito and Vector Control District if they treat nests, or locate a licensed pest control operator in your phone book.**
- ◆ **If you choose to treat nests yourself, wear protective clothing on your body, hands, and head. Use an insecticide that shoots a long stream into the nest entrance.**
- ◆ **Nests may be far away and impossible to locate.**
- ◆ **Paper wasp nests shouldn't require treatment unless they are near human passageways.**

Check out our Web site at www.ipm.ucdavis.edu for more details on yellowjackets and wasp and bee stings.



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U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, DC 20410-8000

ASSISTANT SECRETARY FOR HOUSING-
FEDERAL HOUSING COMMISSIONER

As Special Attention of

All Multifamily Hub Directors
All Multifamily Program Center Directors
All Multifamily Operations Officers
All Directors of Project Management
All Field Counsel

Notice H 2012-5

Issued: April 23, 2012

Expires: This notice remains in effect until
amended, revoked, or superseded

Cross References: Housing Notice 2011-20

SUBJECT: Guidelines on Addressing Infestations in HUD-insured and Assisted Multifamily Housing

I. Purpose

This Notice supersedes Housing Notice 2011-20, "Guidelines on Bed Bug Control and Prevention in HUD Insured and Assisted Multifamily Housing." Readers seeking guidance on the subject of bed bug infestations should instead refer to this Notice, which provides updated information to prevent and address infestations, including but not limited to bed bugs, insects, and all manner of vermin. HUD is providing guidance to Owners, Management Agents (O/As) and residents of HUD Multifamily insured and assisted properties to remind all parties of the importance of prevention, identification, and treatment of infestations in HUD-assisted and HUD-insured rental housing. The Department has received numerous inquiries and comments from the industry and HUD residents seeking clarification and information on appropriate steps to address infestations in Multifamily properties. This Notice provides information and references to best practices regarding the prevention and control of infestations. It also reaffirms existing program requirements with regard to infestations.

II. Background

Pursuant to 24 CFR Part 5, Subpart G, HUD housing must be decent, safe, sanitary and in good repair. Owners of HUD-insured or assisted housing must maintain such housing in a manner that meets physical condition standards. In accordance with project Regulatory Agreements and Section 8 HAP Contracts, the housing must have no evidence of infestation. HUD monitors Owners and Agents (O/As) to ensure that housing meets physical condition standards enumerated in 24 CFR 5.703. This includes providing guidance aimed at preventing and addressing infestations.

Many residents and O/As have contacted HUD to seek guidance on infestations. Of particular concern is the growing problem of bed bugs. According to the United States Environmental Protection Agency (EPA), bed bug populations have recently increased dramatically. HUD is working closely with other federal agencies to develop and share best practices for preventing, identifying and controlling bed bugs.

III. Applicability

This Notice provides guidance to the following types of projects:

- A. Properties assisted with Section 8 Project Based Rental Assistance, Rent Supplement or Rental Assistance Payment (RAP) contracts.
- B. Properties with active Section 202 Direct Loans, Section 202/162, Section 202 and 811 Capital Advances, and Section 202 Senior Preservation Rental Assistance Contracts or Section 811 Project Rental Assistance demonstration funding.
- C. Properties with active FHA insured first mortgages under Sections 207 pursuant to 223(f), 221(d)(3), 221(d)(4), 221(d)(5), 231, 213 or 236.

Certain provisions of this Notice are applicable only to assisted properties, as specified in various sections of the Notice below. The Notice does not supersede existing lease provisions that comply with state and/or local landlord/tenant laws and that have been approved by HUD (where such approval is required).¹ All parties should refer to the property lease executed between the tenant and the O/A, and the property House Rules, for details on Owner and resident rights and responsibilities related to infestations and housing physical condition standards. Certain assisted properties² are also subject to provisions of the HUD Model Lease for Subsidized Programs (Family Model Lease) (Form HUD-90105-A, HUD-90105-B, HUD 90105-C and HUD-90105-D) in HUD Handbook 4350.3, *Occupancy Requirements of Subsidized Multifamily Housing Programs*.

IV. Prevention of Bed Bug Infestations

Of particular concern for Multifamily O/As, as well as project residents, is the resurgence of bed bugs, which can cause discomfort and anxiety for residents and which can spread quickly. The ideal approach to bed bug infestations is to prevent them from occurring in the first place. Federal agencies, such as EPA and HUD, are working in tandem to develop and share recommendations to prevent infestations.

¹ For unassisted O/As, this Notice does not supersede state and local landlord/tenant law related to lease enforcement, housing habitability, and cure rights or damages.

² Section 221(d)(3) BMIR, Section 236, Section 8 New Construction, Section 8 Substantial Rehabilitation, Section 8 State Agency, RHS 515 with Section 8, Section 8 Loan Management Set-Aside (LMSA), Section 8 Property Disposition Set-Aside (PDSA), Rental Assistant Payment (RAP), and Rent Supplement projects are subject to the provisions of the Family Model Lease.

HUD encourages Multifamily O/As to develop an Integrated Pest Management Plan (IPM) to focus on preventing infestations. Such plans describe the ongoing efforts the property management will take to prevent and respond to pests. For more detail on IPMs generally, please see the online guide at <http://www.stoppests.org>. The information below pertains specifically to bed bug infestations.

According to the EPA, principles of IPM for bed bugs include:

- Raising awareness through education on prevention of bed bugs;
- Inspecting infested areas, plus surrounding living spaces;
- Checking for infestations on luggage and clothes when returning home from a trip;
- Reducing the number of secondhand items brought into units and looking for bed bugs or signs of infestation on secondhand items before bringing the items home;
- Correctly identifying the pest;
- Keeping records – including dates when and locations where pests are found;
- Cleaning all items within a bed bug infested living area;
- Reducing clutter where bed bugs can hide;
- Eliminating bed bug habitats;
- Physically removing bed bugs through cleaning;
- Using pesticides carefully according to the label directions; and,
- Following up on inspections and possible treatments.

In addition to or as part of an IPM program, Multifamily O/As are strongly encouraged to take the following steps to prevent bed bugs:

- Provide training for staff to identify bed bugs, and to perform ongoing prevention actions as outlined in the IPM. When a community is at high risk for bed bugs (for example, if the community has experienced prior infestations), periodic building inspections are recommended.
- Actively engage residents in efforts to prevent bed bugs. Education and involvement of project residents is a critical component of IPM for bed bugs. Bed bugs may often go undetected and unreported, because they are active at night, and tenants may not be aware of their presence. O/As may wish to hold workshops for tenants to teach them to identify bed bugs, to create unfriendly environments for pests, and to report suspicions of bed bugs as soon as possible.
- Provide orientation for new tenants and staff, and post signs and handouts.

In addition, tenants should immediately report the suspicion of infestations in housing units or other areas of the property. Early reporting allows the pests to be identified and treated before the infestation spreads. Tenants are the first line of defense against infestations and should cooperate to create living environments that deter pests. This includes reducing unreasonable amounts of clutter that create hiding places for pests and deter treatment.

More information on bed bug prevention may be found by accessing the following websites:³

- **Healthy Homes Training:** *What's Working for Bed Bug Control in Multifamily Housing?: Reconciling best practices with research and the realities of implementation.* http://www.healthyhomestraining.org/ipm/NCHH_Bed_Bug_Control_2-12-10.pdf.
- **National Pest Management Association Bed Bug Hub:** <http://pestworld.org/pest-world-blog/the-bed-bug-hub-one-stop-shop-for-bed-bug-information>
- **National Pest Management Association Best Practices Website:** <http://www.bedbugbmps.org>
- **IPM Curriculum and Blog:** <http://www.stoppests.org>
- **Environmental Protection Agency:** <http://www.epa.gov/pesticides/bedbugs/>

V. Addressing Infestations

The O/A should respond with urgency to tenant reports of infestations. The O/A should endeavor to take appropriate action within a reasonable time period. However, tenants are advised that pest inspections and, if necessary, treatment, may take time to schedule, particularly for recently resurgent pests such as bed bugs, for which it may be difficult to find trained specialists to perform inspections and conduct treatments.

Residents should fully cooperate with the O/A's efforts to identify and address infestations. This tenant cooperation is shown to expedite the control of infestations. Cooperation includes allowing the O/A to enter the unit to perform inspections and treatments, allowing pest treatments to occur, following the pest treatment protocol, and removing infested furniture or other items from common areas such as hallways or community rooms.

Residents are advised that some infestations, including bed bugs, require multiple treatments over the course of several weeks. Generally, relocation from units is not necessary for effective pest treatment. However, if reasonable temporary relocation is necessary, the O/A may request withdrawals from available project funds (which may include Reserve for Replacement, project income, or Residual Receipts, if authorized by HUD), as described below in Section VI, for those days when treatment is actively occurring that may render the unit uninhabitable. All withdrawals of this type must be approved by the Hub/PC Director or designee. Any temporary relocation must be carried out in accordance with applicable civil rights laws, including, but not limited to, Title VI

³ An additional resource for interested parties is the *Bed Bug Handbook*. L.J. Pinto, R. Cooper, and S.K. Kraft, *Bed Bug Handbook: The Complete Guide to Bed Bugs and Their Control* (Mechanicsville, MD: S.K. Pinto & Associates, 2007).

of the Civil Right Act of 1964 and Section 504 of the Rehabilitation Act of 1973. For example, when persons with disabilities are temporarily relocated, they must be placed in housing that provides, at a minimum, the same accessibility features as the housing in which they currently reside. Additionally, the O/A must ensure the right of return for tenants who have had to be temporarily relocated while the treatment is being performed.

VI. Project Resources

An O/A may contact HUD to request project resources for control of infestations. An O/A may use available operating funds to pay for activities to prevent and/or treat infestations. When other sources of funds are not available or sufficient, the Hub/PC Director may honor requests to reimburse Owners for infestation treatment from the Reserve for Replacement account, or, if authorized, the Residual Receipts account. The releases should follow the processes outlined in HUD Handbook 4350.1, *Multifamily Project Servicing*, Chapters 4 and 25. Owners may make advances (loan without interest) when no reserves are available. With prior HUD approval, Owners may repay the advances from project resources as discussed in HUD Handbook 4350.1.

For assisted housing projects, HUD may consider use of rental assistance to pay reasonable and necessary project expenses, such as an increased pest control line item in the project's operating budget, if the Section 8 Housing Assistance Payments (HAP) contract allows for budget-based rent setting in accordance with the *Section 8 Renewal Policy Guide*.

Owners of assisted properties are advised that any rental assistance received under Section 8, Rent Supplement or RAP cannot be used to reimburse residents for the cost of any additional expense to the household, such as purchase of new furniture, clothing or cleaning services. Assisted project Owners' requests for tenants to pay the costs of infestation treatment must be in accordance with the provision for tenant payment of damages or noncompliance as required in the Family Model Lease.

VII. Recurring Infestations

Many properties face recurring infestations. O/As may take initiative to offer protective tools to residents to help safeguard properties from recurrences. To prevent pests from entering a Multifamily property, O/As may voluntarily offer to inspect tenants' furniture before move-in. Where there is an approved (for Assisted Owners) lease provision that complies with state and/or local landlord/tenant law, O/As may require appropriate treatment of furniture upon tenant move-in, or when a tenant moves furniture into the apartment. These services or products are to be offered at the Owner's expense, or may be paid from project operating funds if available.

All Owners (of assisted and unassisted properties) may pursue remedies provided in the lease agreement and in accordance with state and local rental law. Assisted Owners must follow additional guidelines including occupancy requirements for assisted housing, and must adhere to all HUD and state and local landlord/tenant laws before taking action to deny tenancy or remove residents for causes related to infestations. For O/As of assisted properties, the Family Model Lease provides remedies related to damages or noncompliance. Many O/As have proposed lease addenda

related to infestations. As detailed in HUD Handbook 4350.3, Section 6-9, Lease Addenda in assisted properties may not conflict with the Family Model Lease. HUD reserves the right to review and approve Lease Addenda for assisted properties, for example to ensure that tenant payment provisions in proposed Addenda do not exceed the remedies for damages or noncompliance provided in the Family Model Lease.

VIII. Responding to Inspection Findings

Infestations should be addressed when reported by staff, tenants or the Real Estate Assessment Center (REAC), or if an audit by the HUD Office of the Inspector General identifies possible infestation.

Presently, REAC inspectors will only deduct points if there is the “presence of rats, or severe infestation by mice or insects such as roaches or termites. The following deficiencies can be noted: 1) Insects and 2) Rats/Mice/Vermin.”⁴ If there is no evidence of infestation (i.e. there are baits, traps, and sticky boards with no presence of insects or vermin) inspectors are instructed not to record this as a deficiency. If evidence is identified, the infestation may be cited as a deficiency.

As per Inspector Notice No. 2010-01, “the presence and/or treatment of bed bugs will not be scored in the UPCS inspection.” However, inspectors now ask the O/A to identify any units and/or buildings that are infested before the inspection begins. If bed bugs are reported, the inspector will record the units and/or buildings affected in the comment section of the Physical Inspection report.

Because bed bug infestations are on the rise, HUD staff will take additional steps to monitor and track reports of bed bug infestation and treatments of such infestations. When bed bugs are reported by the Owner/Agent at the time of inspection or if the Inspector notes the presence of bed bugs, REAC sends a “Bed Bugs Reported” email to the Hub/Program Center Director. HUD staff must take the following steps upon receipt of the “Bed Bugs Reported” email from REAC (regardless of the PASS score the property receives) or if bed bugs are cited as a deficiency within the REAC report, or if bed bugs are reported by the O/A, project residents, the Performance Based Contract Administrator, or an OIG audit:

- Enter the bed bug information on the Problem Statement screen in the Integrated Real Estate Management System (iREMS).
- If bed bugs were identified by REAC, send the attached letter (Attachment 1) to the Owner regardless of the score of the REAC Physical Inspection.
- Advise the Owner to describe what actions were taken or will be taken to eradicate the infestation.
- Advise the Owner to inform HUD of the response to the infestation, and to inform HUD if and when the problem has been completely eradicated.

⁴ HUD Physical Inspection Program—Chapter 3: UPCS Definitions Training—Health & Safety

- Release funds from Reserve for Replacement or Residual Receipts accounts if requested and if such funds are available and authorized.
- Continue to enter all related information into the Problem Statement screen in iREMS; and,
- Report any significant developments or problems regarding a bed bug infestation to Headquarters, Office of Asset Management.

If you have questions, please contact your Desk Officer in the Office of Asset Management.

Carol J. Galante
Acting Assistant Secretary for Housing –
Federal Housing Commissioner

Enclosures

ATTACHMENT

Property Owner
Address

SUBJECT: Bed Bugs
Property Name: _____

Dear Owner:

The [Hub Name] Multifamily Hub has received notification from the Real Estate Assessment Center (REAC) that during the physical inspection of your property performed on [Date], the inspector indicated that bed bugs were reported present at the property. The units/buildings below were identified as being infested with bed bugs:

Within 5 days of the date of this letter, please inform your Project Manager of the actions you are taking for bed bug control. This information should include the method of treatment used (or to be used), the timing for treatment(s), and your proposed plan for monitoring and preventing the possibility of future infestation.

If you have any questions, please contact your Project Manager, [Project Manager's Name], at [Project Manager's Telephone Number] ext. [Extension]

Sincerely,

Supervisory Project Manager
Project Management Division



**U.S. Department of Housing and Urban Development
Office of Public and Indian Housing**

SPECIAL ATTENTION OF:

NOTICE: PIH-2012-17

Regional Directors; State and Area
Coordinators; Public Housing Hub
Directors; Program Center Coordinators;
Troubled Agency Recovery Center Directors;
Special Applications Center Director;
Administrators; Offices of Native American
Programs; Public Housing Agencies;

Issued: February 28, 2012

Expired: This Notice remains
in effect until amended, superseded,
or rescinded

Housing; Housing Choice Voucher/Section 8;
Tribally Designated Housing Entities;
Indian Tribes; Resident Management
Corporations

Cross References:

SUBJECT: Guidelines on Bedbug Control and Prevention in Public Housing

I. Purpose

Bedbug infestations have become a serious problem in housing throughout the country. Public Housing properties are not immune to infestations. This Notice provides information and references to best practices regarding the prevention and control of bedbug infestations. It also provides guidance on the rights and responsibilities of HUD, Public Housing Agencies (PHAs) and tenants with regard to bedbug infestations.

II. Background

After a long absence, bedbug infestations are a growing problem in the United States today. According to the United States Environmental Protection Agency (EPA), bedbug populations have increased dramatically. Bedbugs are considered a pest of significant public health importance by the EPA and the Centers for Disease Control and Prevention (CDC). Although the insects are not known to transmit disease, bites may itch and cause an allergic reaction in some people, which may lead to secondary infections. The presence of bedbugs may also contribute to stress or anxiety.

Experts suspect the resurgence is associated with greater international and domestic travel, lack of knowledge regarding the complex measures needed to prevent and control bedbugs, changes in pesticide availability and technology, and increased resistance of bedbugs to available pesticides. Bedbugs are not an indicator of poor sanitation, but excess clutter can provide them more places to hide, making early detection and targeted control

difficult.

HUD has received numerous reports of bedbug infestations in Public Housing properties in various regions. HUD is working closely with other federal agencies to develop and share best practices for preventing and controlling bedbugs.

III. Applicability

This notice applies to PHAs administering the public housing and project based Section 8 program. It may also be of interest to Indian tribes/TDHEs as well as owners/agents providing assisted housing through the Housing Choice Voucher (HCV) Program.

IV. Prevention of Bedbug Infestations

The best approach to bedbug management is to prevent an infestation from occurring in the first place. Federal agencies, such as EPA and HUD, are working in tandem to develop and share recommendations to prevent bedbug infestations.

PHAs are strongly encouraged to develop an Integrated Pest Management (IPM) Plan. Such plans describe the ongoing efforts the property management will take to prevent and respond to pests. For more details on IPM, please see the online guide at <http://www.stoppests.org>. According to the EPA, principles of IPM for bedbugs include:

- Raising awareness through education on prevention of bedbugs;
- Inspecting infested areas, plus surrounding living spaces;
- Checking for bedbugs in luggage and clothes when returning home from a trip;
- Looking for bedbugs or signs of infestation on secondhand items before bringing the items home;
- Correctly identifying the pest;
- Keeping records – including dates and locations where pests are found;
- Cleaning all items within a bedbug infested living area;
- Reducing clutter where bedbugs can hide;
- Eliminating bedbug habitats;
- Physically removing bedbugs through cleaning;
- Using pesticides carefully according to the label directions; and,
- Following up on inspections and possible treatments.

In addition or as part of an IPM plan, PHAs are strongly encouraged to take the following preventive steps:

- Provide training for staff to identify bedbugs, and to perform ongoing prevention actions as outlined in the IPM. When a community is at high risk for bedbugs (for example, if the community has experienced prior infestations), periodic building inspections are recommended.

- Actively engage residents in efforts to prevent bedbugs. Education and involvement of tenants is a critical component of IPM for bedbugs. Bedbugs may often go undetected and unreported and because they are active at night tenants may not be aware of their presence. PHAs may wish to hold workshops for tenants to learn to identify bedbugs, to create unfriendly environments for pests, and to report suspicions of bedbugs as soon as possible.
- Provide orientation for new tenants and staff, and post signs and handouts regarding bedbug prevention.

More information on bedbug prevention may be found by accessing the following websites:¹

- **Healthy Homes Training:** *What's Working for Bedbug Control in Multifamily Housing?: Reconciling best practices with research and the realities of implementation.*
http://www.healthyhometraining.org/ipm/NCHH_Bed_Bug_Control_2-12-10.pdf.
- **National Pest Management Association Bedbug Hub:**
<http://pestworld.org/pest-world-blog/the-bed-bug-hub-one-stop-shop-for-bed-bug-information>
- **National Pest Management Association Best Practices Website:**
<http://www.bedbugbmps.org>
- **Environmental Protection Agency:**
<http://www.epa.gov/pesticides/bedbugs/>
- **Public Housing Environmental Conservation Clearinghouse (PHECC)**
<http://www.hud.gov/offices/pih/programs/ph/phecc/pestmang.cfm>

V. Addressing Infestations

The PHA should respond with urgency to any tenant report of bedbugs. Within 24 hours of the tenant report, the PHA should make contact with the tenant, provide the tenant with information about control and prevention of bedbugs and discuss measures the tenant may be able to take in the unit before the inspection is performed. However, a bedbug inspection and, if necessary, treatment, may take time to schedule. The PHA should endeavor to take appropriate action within a reasonable time period using the guidelines provided below.

¹ An additional resource for interested parties is the *Bedbug Handbook*. L.J. Pinto, R. Cooper, and S.K. Kraft, *Bedbug Handbook: The Complete Guide to Bedbugs and Their Control* (Mechanicsville, MD: S.K. Pinto & Associates, 2007).

Following a report of bedbugs, the PHA or a qualified third party trained in bedbug detection should inspect the dwelling unit to determine if bedbugs are present. It is critical that inspections be conducted by trained staff or third party professionals. Low level inspections may escape visual detection. For this reason, multiple detection tools are recommended. Recent research indicates that “active” bedbug monitors containing attractants can be effective tools for detecting early infestations. Some licensed pest control applicators use canine detection to verify the presence of bedbugs. The inspection should cover the unit reporting the infestation and no less than surrounding apartments consisting of the units above, below, left and right, and should be completed within three business days of a tenant complaint if possible. If reputable, licensed pest control companies are unattainable within three calendar days, the PHA is required to retain documentation of the efforts to obtain qualified services. If an infestation is suspected but cannot be verified using the methods described above, the PHA should re-inspect the unit(s) periodically over the next several months.

When an infestation is identified, the unit and surrounding units should be treated for bedbugs according to the IPM Plan. Chemical treatments are necessary, but not reliable. Therefore, encasement, interception devices, vacuuming, steaming, freezing and commodity or building heat treatments may be utilized as part of the bedbug control effort. Infestations are rarely controlled in one visit. Effective treatment may require two to three visits, and possibly more. The length, method and extent of the treatment will depend on the severity and complexity of the infestation, and the level of cooperation of the residents.

VI. Additional Considerations

PHAs may offer protective tools to residents to help safeguard properties from infestation and recurrences. For example, the PHA may offer residents bed covers, climb-up interceptors, or other detection or protection devices that may become available. PHAs may voluntarily offer to inspect tenants’ furniture before move-in. PHAs may also offer tenants a service of non-chemical treatment of household items upon tenant move-in, non-chemical treatment or inspection of used furniture and/or non-chemical treatment of luggage before it is unpacked when a tenant returns from a trip. Tenants may voluntarily use such services, but PHAs may not require tenants to do so. These services or products are to be offered at the PHAs expense.

A PHA may not deny tenancy to a potential resident on the basis of the tenant having experienced a prior bedbug infestation, nor may give residential preference to any tenant based on a response to a question regarding prior exposure to bedbugs. A PHA may not charge a tenant to cover the cost of bedbug treatment; such costs should be covered by the PHA. HUD reserves the right to approve Lease Addenda. Lease Addenda may not conflict with this Notice.

VII. Tenant Rights and Responsibilities

Tenants are strongly encouraged to immediately report the suspicion of possible bedbugs in a housing unit or other areas of the property. Early reporting allows the pests to be identified and treated before the infestation spreads. Tenants are the first line of defense against bedbug infestations and should be encouraged to create living environments that deter bedbugs. This includes reducing unreasonable amounts of clutter that create hiding places for bedbugs, and regular checking of beds and laundering of linens.

Bedbug infestations can cause health concerns, including physical discomfort and may contribute to stress and anxiety on the part of the residents. Tenants should be advised of the following:

- A PHA may not deny tenancy to a potential resident on the basis of the tenant having experienced a prior bedbug infestation, nor may an owner give residential preference to any tenant based on a response to a question regarding prior exposure to bedbugs.
- A tenant reporting bedbugs may expect expeditious response and attention by the PHA, but should be advised that inspection and, if necessary, treatment of bedbugs may take time to schedule. The inspections should occur within three calendar days of the tenant report when possible.
- Following a report of bedbugs, the PHA or a qualified third party trained in bedbug detection should inspect the dwelling unit to determine if bedbugs are present. It is critical that inspections be conducted by trained staff or third party professionals. The PHA may enter the unit to perform these activities, in accordance with the lease.
- If bedbug infestation is found in the unit, the tenant may expect treatment to begin within five days of the inspection, though depending on the form of treatment, this may not be possible. Tenants should be advised that treatment may take several weeks.
- Tenants are expected to cooperate with the treatment efforts by allowing for heat treatment of clothing and furniture and refraining from placement of infested furniture or other items in common areas such as hallways. Tenant cooperation is shown to expedite the control of bedbugs and to prevent spreading of infestations.
- Management may make staff available to help with moving and cleaning of furniture to accomplish the treatment effort.
- The tenant will not be expected to contribute to the cost of the treatment effort.

- The tenant will not be reimbursed the cost of any additional expense to the household, such as purchase of new furniture, clothing or cleaning services.

VIII. REAC Inspections

Bedbugs should be addressed when reported by staff, tenants or the Real Estate Assessment Center (REAC), regardless of the score of the REAC physical inspection. Inspectors ask the PHA to identify any units and/or buildings that are infested before the inspection begins. When bedbugs are reported or observed, the inspector will record the units and/or buildings affected in the comment section of the Physical Inspection report, noting that bedbugs were reported. The inspector will then select an alternate unit to inspect to replace any unit with observed or reported bedbugs.

REAC sends a “Bedbugs Reported” email to the local PIH field office with a copy to the PIH Regional director when bedbugs are noted in the comments section of a Physical Inspection Report. The PHA will see the information about bedbugs in the comment section of the Physical Inspection Report which provides PHAs with the necessary information to address the situation.

/s/

Sandra B. Henriquez, Assistant Secretary for
Public and Indian Housing

Attachment

Prevention and Safe Removal of Bedbugs

Bedbug infestations have become a serious problem in housing throughout the country. Public Housing properties are not immune to infestations, anyone or any home can get bedbugs. Bedbugs live on human and animal blood and typically hide and live in cracks and crevices in dark and undisturbed locations close to their hosts. They can live for long periods of time and although visible to the naked eye, they may be difficult to detect.

Bedbug Prevention Action Plan

- Inspect in and around sleeping and resting areas at home once a month.
- Look for signs of bedbug activity, active infestations will have fecal spotting, live or dead bedbugs, shed skins and bedbug eggs.
- Avoid used furniture and mattresses, especially discarded furniture and mattresses. Used furniture and refurbished mattresses may have bedbugs and bedbug eggs that are difficult to see.
- Inspect for the signs of bedbugs when traveling away from home. Look for live or dead bedbugs, shed bedbug skins or bedbug eggs and fecal spots on mattresses, clothing or dark cracks and crevices. Wood, metal or plastic furniture, sofas, chairs, tables and many other items may be infested with bedbugs.
- If contact with an active bedbug infestation is suspected away from home, segregate and isolate in sealed plastic bags any exposed luggage, clothing and personal effects until inspection and decontamination can be completed.
- Bedbugs prefer to live in cracks and crevices in areas like baseboards, moldings, window/door frames, and cracks/seams in walls and furniture, especially headboards and bed frames and screw holes.
- Seal baseboards, cracks, crevices, heat, plumbing and electrical services shared between apartments with pest-proofing sealants.
- Encase mattresses and box springs. Seal box springs in an appropriate zippered encasement to prevent bedbugs hiding inside from escaping; this location is commonly affected in bedbug infestations and yet difficult to inspect.
- Thoroughly vacuum apartment, furniture and all belongings and use crevice tools and other attachments where feasible. Place the contents of the vacuum in a tightly sealed disposable bag and remove.

EARLY DETECTION IS CRITICAL Early identification and reporting of infestations by residents to building management and neighbors limits the spread of bedbugs. As soon as possible contact Property Manager and/or pest management company. Report the suspected activity as soon as possible. The longer you wait the more likely the problem is to spread and the more difficult and costly it will be to control.

Bedbug Removal Action Plan

The following sequence of steps has been outlined by the Armed Forces Pest Management Board in order to facilitate control of bedbugs in housing.

- Using a vacuum cleaner (preferably HEPA-filtered), remove the bugs and their cast skins from all observed and suspected harborage sites during the initial inspection, and periodically afterward (once weekly is a suggested self-help action). The vacuum bag should

Prevention and Safe Removal of Bedbugs

be removed immediately afterward, sealed tightly inside a larger plastic bag, and that bag incinerated or placed in the next normal trash collection.

- Launder all infested cloth items in hot water, 120 degrees Fahrenheit or hotter for at least 10 minutes, with soap or detergent, then dry in a warm or hot dryer of at least 140 degrees for at least 20 minutes, or dry clean to kill all bedbug life stages present.
- Enclose each mattress and box spring in a sealed plastic cover, like those sold commercially. These types of encasements should be of high quality and bedbug puncture proof to limit exposure to house dust mites or bedbugs.
- Place and seal all recently laundered cloth items (*e.g.*, bed linens, clothing) inside new large plastic bags or tightly closed bins to prevent any bedbugs from re-infesting them.
- Seal shut all cracks, crevices, and entry points to wall voids, using a high-quality silicone-based sealant, especially within a 20 foot radius of any spot where bedbug bites have been reported, or where the bugs have actually been collected.
- Additional or alternative physical control measures against bedbugs may include: heat, cold, steam, physical mashing and sticky insect monitors.
- A residual insecticide should be applied, according to label directions, to each infested site and preferably to a small area around each site. Such applications often involve treating cracks and crevices. When planning and conducting any such treatments, consider examining, if not treating, the opposite side of any involved wall, floor or ceiling.
- Electrical outlet boxes, and similar voids that cannot be readily sealed, should be treated with an appropriately labeled insecticidal dust.
- Consider including some type of insect growth regulator (IGR) as a concurrent or adjunctive treatment (*e.g.*, as a tank mix).
- Limited use of an aerosol or ULV pyrethroid may facilitate the detection of hidden bedbugs by causing them to move around more, and may also potentially increase their exposure to any previously applied residual insecticide. DO NOT use any over-the-counter “foggers.” They are not very effective and may cause bedbugs to scatter.
- Fumigation or heat (or cold) treatment of batches of furniture, clothing or other items within chambers may be warranted and affordable in specific cases, but whole-structure fumigation to control bedbugs is seldom practical or economically feasible. And such treatments provide no residual effects at all.
- Re-inspection of infested structures and sites should be done about 10-21 days after any initial treatment, and (if needed) again about 10-21 days later, to detect, and to precisely target the treatment (if needed) of any continued infestation.¹

Carefully reintroduce cleaned items. Isolate and contain items that have been properly cleaned, laundered or heat treated. Heavy duty plastic bags or air tight containers may be used for this purpose. Clear bags and containers are preferable.

NEVER USE THE FOLLOWING PRODUCTS FOR BEDBUG TREATMENT:

- **Insecticide “bombs”, total release foggers, camphor, kerosene, diesel, gasoline, alcohol or other similar products. These products can cause serious health problems. They are dangerous if misused and can cause fires and explosions. These products are not appropriate for bedbug management.**

Prevention and Safe Removal of Bedbugs

Additional information about bedbug prevention and treatment may be found by accessing the following resources:

- **Armed Forces Pest Management Board: *Bedbugs - Importance, Biology and Control Strategies***
<http://www.afpmb.org/sites/default/files/pubs/techguides/tg44.pdf>
- **Environmental Protection Agency:**
<http://www.epa.gov/pesticides/bedbugs/>
- **Healthy Homes Training: *What's Working for Bedbug Control in Multifamily Housing?: Reconciling best practices with research and the realities of implementation.***
http://www.healthyhometraining.org/ipm/NCHH_Bed_Bug_Control_2-12-10.pdf.
- **National Pest Management Association Bedbug Hub:**
<http://pestworld.org/pest-world-blog/the-bed-bug-hub-one-stop-shop-for-bed-bug-information>
- **National Pest Management Association Best Practices Website:**
<http://www.bedbugbmps.org>
- **New York City Health Department:**
<http://www.nyc.gov/html/doh/downloads/pdf/vector/bed-bug-guide.pdf>
- **Public Housing Environmental Conservation Clearinghouse (PHECC)**
<http://www.hud.gov/offices/pih/programs/ph/phecc/pestmang.cfm>
- <http://www.stoppests.org>
- *Bedbug Handbook*. L.J. Pinto, R. Cooper, and S.K. Kraft
- *Bedbug Handbook: The Complete Guide to Bedbugs and Their Control* (Mechanicsville, MD: S.K. Pinto & Associates, 2007).

Stop Bed Bugs Safely!

Use this information to help stop the spread of bed bugs in your home and community.



Remember that bed bugs:
Cannot jump or fly
Do not spread diseases
Do not burrow into the skin

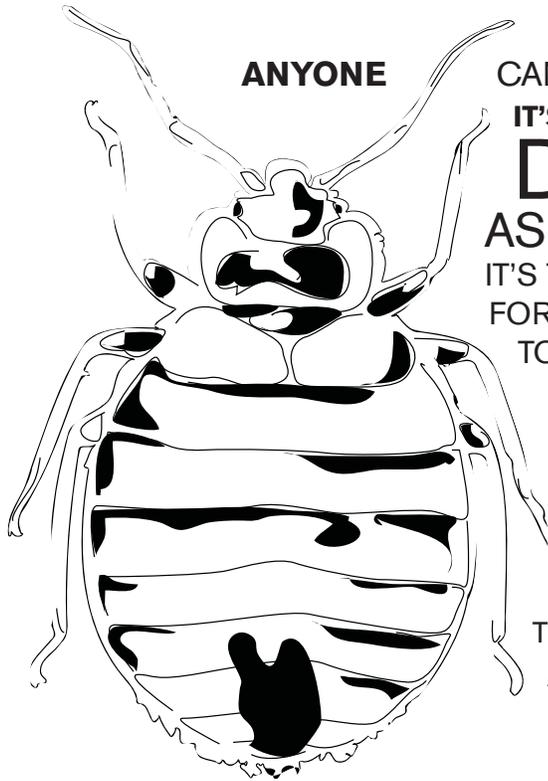
Look for signs of bed bugs: bites, black spots on the bed, live or dead bugs

Know where to look: paper thin crevices close to where you sleep

Check your home regularly



- Reduce household clutter and vacuum furniture and floors.
- Encase your mattress and box spring in bug proof covers.
- Wash clothes and linens and dry them on a hot setting.
- Do not use “bug bombs” or foggers, which may worsen the problem.
- Do not take discarded furniture or items from the street - these things may already have bed bugs.
- Ask for help! Do this to get a pest control pro involved:



ANYONE

CAN GET THEM

IT'S NOT YOUR FAULT.

**DON'T BE
ASHAMED**

IT'S TOTALLY NORMAL
FOR IT TO TAKE A WHILE
TO GET RID OF THEM

**DON'T
GIVE
UP** **IT'S NOT
YOUR FAULT.**

TELL SOMEONE.

ASK FOR

HELP.

LET YOUR LANDLORD KNOW

RIGHT AWAY. IT'S NOT YOUR FAULT.

YOUR LANDLORD HAS A RESPONSIBILITY TO HELP YOU.

KEEP WITH IT. **YOU CAN DO IT.**

KEEP REPORTING IT TO YOUR LAND-
LORD, IF THE BED BUGS DON'T GO AWAY AFTER THE

SPRAY. **LOOK** FOR EARLY WARNING **SIGNS:**

TINY **BLOOD SPOTS** ON YOUR SHEETS. YOU

CAN'T RELY ON BITES TO TELL IF YOU HAVE

BED BUGS. UP TO 70% OF PEOPLE DO NOT REACT TO BITES.

BED BUGS WILL NOT GO AWAY ON THEIR OWN.

THE SOONER YOU **BEGIN** TO **TAKE**

STEPS TO GET RID OF THEM, THE less time it will

take for you to be **BED BUG FREE.**

Pest Monitoring Pays Big Dividends at McMinnville Housing Authority

Over the years, cockroaches became a serious problem at McMinnville Housing Authority (MHA). The Pest Management Professional (PMP) made monthly visits and used a variety of control methods, but infestations persisted. Residents complained and took pest control into their own hands, maintenance personnel found cockroaches in smoke detectors, and employees feared carrying pests home. The staff understandably worried about the potential of lower REAC scores. To solve these problems, MHA looked to Integrated Pest Management (IPM). An IPM program consists of a series of steps to prevent and control pest infestations. The steps include monitoring pest populations to provide a continuous evaluation of the program's effectiveness.

In the fall of 2011, trainers from the Northeastern IPM Center conducted IPM training for staff and residents. Once everyone understood the biology and behavior of cockroaches and the other pests in the area, they could see how IPM would work. They made a plan to turn units into pest-proof boxes to prevent pest entry. Then, the only pest entry would be hitchhiking on residents' possessions. Move-in procedures and resident education about prevention and inspection lessened the chances of pests entering undetected.

Ready for a Clean Sweep

MHA is in McMinnville, Tennessee and has 424 units. The staff chose the 80-unit West Riverside Housing Development as the pilot site. Built in the 1963, West Riverside has mostly duplexes. At the start of the IPM program the site was undergoing major renovations. MHA relocated residents during construction. Construction crews removed interior walls and cabinets, exposing many areas where cockroaches had been hiding. Where inspection of exposed areas found no cockroaches, frass (droppings) indicated their presence. MHA saw renovation as an opportunity to clean up the homes and pest-proof them against future infestations.

Success by Design

The West Riverside layout enhanced pest control success. The units are separate from one another. Each building is a duplex, offering the ability to have pest-proof compartments by focusing on pest-proofing ducts and other connections between the two homes. Once the structures were pest-proof, the only way for German

Cockroaches (the main pest of MHA) to get in was by hitchhiking on residents' belongings.

Patricia Basham, Executive Director of the MHA, was aware of IPM and wanted to learn if it would help improve pest control. With renovations under way, she seized the opportunity to pest proof her units and start a pest management program that would keep them pest-free.

Basham knew there was more to pest control than calling the PMP; that it was important to have everyone living and working at MHA functioning as a pest control team. The renovation contractors were pest proofing homes, but it was up to the residents to keep the pests away. The lease mentioned housekeeping, but many residents never learned how to maintain a clean home or help solve pest problems. Basham modified lease to include IPM and the residents' role in IPM. She also started resident training to spread the IPM message and to change residents' routines so that homes were not pest-friendly.

Work Order Makeover

In addition to renovating, MHA was upgrading its electronic work order system. Rather than keeping everything in her head, Basham wanted to track the IPM program's progress through this new system. She enlisted the help of Todd Robinson, the West Riverside Maintenance Supervisor. Robinson and his crew work in units every day and know the residents and the pest pressures at the site. These employees could make repairs and the recommendations needed to make homes attractive for people but unattractive to pests. At the beginning of the IPM program, Robinson helped develop a maintenance check sheet to coordinate maintenance and pest management issues.

The Plan

Sealing units helped not only with weatherization but assisted in pest exclusion and the elimination of areas where pests could hide. As part of the renovation, crews removed much of the cockroach frass. In addition, the PMP used bait and other least-risk methods to eliminate cockroaches if crews found them. Robinson and his crew learned the dos and don'ts from the IPM training and Stoppests.org. "[As part of the training] we went into our public housing units, some undergoing major renovations, and learned the signs of current and/or previous infestations," said Basham.

MHA added IPM housekeeping expectations and non-compliance ramifications to the lease. IPM training is now part of new resident orientation. Existing residents receive training run by MHA personnel using the resident training video available at Stoppests.org. Now residents know what to look for, what to report, and how their actions affect pest control. "We strengthened our policies and procedures and continue to train residents in the ways they can prevent and control pests in their units," said Basham. Although residents are on the front line, maintenance and management staff also find problems.



Residents receive pest control and cleaning supplies as part of their training.

Monitoring is Key

In an IPM program, monitoring devices capture pests and provide the data for determining where pests are active. Visual inspections done during the day may miss beginning infestations since the pests are mostly active at night. Monitoring seems like extra work, but it pays dividends. According to Basham, "We immediately ordered the cockroach monitors and placed them in our units." With the monitoring records in hand, MHA manages pests property-wide and has the documentation to prove it.

Monitoring was something new for MHA and proved its worth. Robinson and Basham developed a customized pest control log for their operation, "We modified our inspection sheet so it would fit our unique situation," said Basham. To coordinate maintenance and pest issues, the check sheet includes pest control parameters anyone can discern and the monitoring results. It is part of routine maintenance inspections and part of the turnover procedures. By maintaining monitoring records, MHA personnel know where pests are under control and can focus time and the PMP's efforts in areas where infestations have begun. Small infestations are easier to eliminate than infestations that have grown and spread. Monitoring increases the efficacy and efficiency of a pest management program.

Coordinate the Team

As with any new technique, synergizing management, resident, maintenance, and PMP roles presented a challenge. The IPM team had the tasks of educating everyone on the site, monitoring and inspecting in each unit, and eliminating pest problems. Combining and refocusing some jobs accomplished more without adding work. Staff continued performing their routine tasks but with added awareness of their impact on pest control.

Before IPM, the PMP spread his time among all units. He performed some monitoring and applied pesticides on a routine basis. The PMP relied on pesticides to keep infestations down until his next visit, "because pest control was viewed as a service, not a way of life for everyone at MHA," according to Basham, "The drastic change came when the responsibility for monitoring was shifted to residents and maintenance." Now every unit has monitors, one behind the refrigerator in the kitchen and another behind the toilet in the bathroom. Maintenance staff checks the monitors and records the results each time they go into a unit. With good recordkeeping, MHA learns where infestations are, then directs the PMP's limited time to eliminating infestations.



Monitors: in kitchen behind refrigerator and in bath behind toilet.

Through the work order system, residents and maintenance assist the PMP by supplying information on pest activity. Maintenance personnel always accompany the PMP when he visits units. Even before IPM, maintenance staff members visited each unit bimonthly to replace furnace filters. While there, it takes only a few extra minutes to check monitors and record the findings. On alternate months, management inspects residences. During these inspections they now check monitors and any maintenance items with potential pest control consequences. Someone from MHA, therefore, is in every unit each month checking monitors with very little addition to their workload. The PMP's time is reserved for actual control measures and advising MHA managers on how to improve their program. Compiling site-wide monitoring data helps the PMP and management identify areas for improvement and further refine the IPM program.

Good Cockroach Control

When MHA decided to transition to IPM, the units had been vacant between three and six months and pest activity was low. Without IPM, Basham expected most of the units would be re-infested with cockroaches after residents returned. Since the implementation of IPM, monitoring has detected cockroaches in only four units. In all cases, residents were recent arrivals. Most likely, they brought cockroaches with them from an infested location. Early detection allowed for quick control. Improved control paid dividends in other ways. According to Basham, "The REAC inspector did not find a single cockroach during our recent REAC inspections."

Although MHA implemented IPM because of cockroaches, they knew of other potential pests, including rodents and bed bugs. Through IPM training, staff members and residents learned about other pests and about how to manage them.

Monitoring and good communication set MHA up for success with bed bugs. Since the training, there have been only two occurrences of bed bugs. Residents reported them and the PMP responded immediately, before the infestation could spread. A new bed bug policy is now in place helping ensure future success. Maintenance efforts and housekeeping help manage not only cockroaches but also rodents and ants. A well run IPM program never is limited to a single kind of pest.

Basham sums up her IPM experience this way, "The Northeastern IPM Center has helped us every step of the way, providing names of suppliers, language for policies and anything else we needed. I do hope that HUD continues and even expands this program. Every PHA needs the opportunity to receive this training."

To Replicate MHA's Results:

1. Train staff and residents on pests and IPM.
2. Set up an electronic system for recording monitoring results and pest management efforts.
3. Install monitoring devices in every home (ask your PMP for monitoring options for pests in your area).
4. Assign the monitor checking and recording results role to the staff that enter units on a routine basis.
5. Take action based on monitoring results.

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Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment. (EPA)

For more information and resources visit; www.stoppests.org