State Bed Bug Policy

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Strong States, Strong Nation
What we will cover:

• Learn the nature and life of a bedbug
• Discover why the federal government and many state and local governments are unable to address them
• Learn what state and local government can do to address bedbugs
• Learn what state legislatures can do to address bedbugs
• Charts on the life of a bedbug
• Lists of state laws designed to control bedbugs
• Challenges faced by the EH Community on controlling bedbugs
Life of the Bed Bug

- Bed Bugs (*Cimex lecturlarius*) are blood-sucking insects; most adapted to humans
- Small, oval, brownish insects
- Flat bodies; broad head
Adapted to Living with Humans

- Survive on Human Blood
- Like warm, sheltered areas (like bedrooms)
- Feed at night
- 70% live in the bed, 23% live within 5’ of the bed; none more than 10’ to 15’ away from bed
Bedbugs have been with Humans for thousands of years

<table>
<thead>
<tr>
<th></th>
<th>Pre - 1900</th>
<th>1900 - 1940s</th>
<th>1945 - 1960</th>
<th>1960 - 1990</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence of bed bugs</td>
<td>Very Common</td>
<td>Very Common</td>
<td>Very Common, but start to decline with DDT</td>
<td>Infestations are rare</td>
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<tr>
<td>Societal knowledge of</td>
<td>Very high</td>
<td>Very high</td>
<td>Declining</td>
<td>Low/basic lack of awareness</td>
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<tr>
<td>bed bugs and treatments:</td>
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Bed Bug Population

- After WWII, the bed bug populations were decimated by DDT.
- Since the 1990s, bed bugs have made a comeback and are now a common pest in the United States.
- The steady increase in the percentage of bed bug inquiries made to the National Pesticide Information Center (NPIC) over the past decade indicates that public awareness and concerns about bed bugs are on the rise.
Life of the Bed Bug

- Eat every 7-10 days (if host is available)
- Live around 9 months; lifecycle can be as short as 50 days
- Can mature within a month under best conditions
- Females lay between 200-500 eggs in lifetime
- Up to 3 or more generations in a year’s time
Bed Bugs need **Blood**!

- Bed bugs live solely on **blood**
  - From humans, other mammals, birds
- They spend 90% of their lives **HIDING!**
- Cleanliness or filth of the room has no affect on their survivability
  - They can live, thrive in any crack that protects them and their eggs
Life of the Bed Bug

Note:
Bed bug takes 3-10 minutes to complete feeding. Must feed on blood to develop.

Illustration by: Scott Charlesworth (Purdue University), based in part on R. L. Usinger (1966) *Monograph of Cimicidae*
Bed Bugs grow tremendously while feeding.
Adaptable to Travel

• Do not fly or jump; but can walk between rooms
• Excellent hitchhikers – can travel on clothing, luggage, bedding, used furniture
• Often crawl through cracks in wall, electrical outlets or any voids in the wall
Signs of Bed Bugs

• Sleeping for the first time on a used or shared mattress (i.e., hotels)
• Bringing in used furniture (especially bedframes or bedding) that has been previously used
• Blood stain on sheets or pillowcases
• Dark or rusty spots of bedbug excrement on sheets and mattresses, bed clothes, and walls
• Bedbug fecal spots, egg shells, or shed skins in areas where bedbugs hide
• An offensive, musty odor from the bugs’ scent glands
• Follow the blood stains (human blood)
Bed Bugs and Human Health

• Although they are a nuisance, they do not transmit diseases.
  – Extensive testing has determined that bed bugs are incapable of transmitting human pathogens, although there is some evidence that they can spread Chagas disease

• Health Effects
  – Anemia in severe cases
  – Secondary infections – Impetigo, Ecthyma, Lymphangitis

• Perhaps as few as 5% of people react strongly to bed bug bites initially; some people have no reaction

• They can cause mental health issues
  – Inability to sleep, hallucinating about bedbugs
Examples of Bed Bug Bites

Photo Credit: Tim Stock, Oregon State University

Photo Credit: Harold Harlan, Armed Forces Pest Management Board

Photo Credit: Harold Harlan, Armed Forces Pest Management Board

Photo Credit: Dini Miller, Virginia Tech Bed Bug and Urban Pest Information Center
When Bed Bugs Bite!

- Mostly bite at night, when people sleep
- Their long beaks pierce the skin to suck the blood
- Will bite any exposed area of skin; legs and arms are easiest to reach
- Most bites are painless, but can become itchy welts
When Bed Bugs Bite!

- A line of bites may appear if several bed bugs have fed
- The bite is not felt, but the saliva may cause a reaction
- Itchiness peaks after a week, then declines
- Much like a mosquito bite
When Bed Bugs Bite!

• To confirm a bed bug bite, you must confirm you have bed bugs!
Bed Bug Infestations

- Bedbugs do not have nests like ants or bees; they live in groups in hiding places near a host bed in areas such as:
  - Mattresses
  - Box springs
  - Bed frames
  - Headboards
  - Drapery and areas where drapes rest on the floor
  - Behind picture or wall hanging near sleeping areas
  - Any place where they have easy access to people to bite at night

(Remember: 70% of bed bugs live in beds)
If you suspect an infestation...

- Remove all bedding and check it carefully for signs of the bugs or their excrement
- Remove the dust cover over the bottom of the box springs
- Examine the seams of the wood framing of the box springs
- Peel back the fabric where it is stapled to the wood frame
- Check around the bed; including
  - Inside books, telephones or radios near the bed
  - The edge of carpeting
  - Electric outlets
- Check your clothing
- Check your closet
- Finally, call an exterminator if you have doubts
Identifying Bed Bugs

• Humans are accurate in identifying bed bugs 30% of the time
  – Of 3000 samples of ‘bed bugs’ sent to U of MN, only 24% were actually bedbugs
  – Bat Bed Bugs (which live on bats) are often mis-labeled

• Dogs are accurate in identifying bed bugs 97% of the time
Treatments to Eliminate Bed Bugs

What Works
- Reduce clutter or put items in plastic boxes
- Encase mattress and box spring
- Install bed bug traps
- Launder or hot dry bed linens at least weekly
- Use a heat chamber
- Place small items in a freezer for 4 days
- Apply steam to furniture
- Remove bed bugs using a vacuum machine
- Discard heavily infested items
- Apply repellent to pants, socks, and shoes

What Doesn't Work
- Switch sleeping location
- Ultrasonic pest repellers
- Dryer sheets and plant oil-based repellents
- Moth balls
- Rubbing alcohol
- House cleaning materials
- Most natural pest control products
- Foggers
- Most consumer pesticide sprays
Treatments to Eliminate Bed Bugs

The entire room/area/apartment/building must be treated in order to ensure no further infestations

Getting rid of bedbugs begins with cleaning the places where they live:

- Clean bedding, linens, curtain, and clothing in hot water (120 degrees) and then on the highest dryer setting. Dry cleaning may not kill all the bugs.
- When removing bed linens, make certain not to dislodge eggs or drop bed bugs onto the bed where they may be missed by treatment. You may want to bag your linens (in a plastic bag) to ensure no eggs or bugs drop before being laundered.
- Place stuffed animals, shoes, and other items that can’t be washed into a dryer and run on high for 30 minutes.
- Use a stiff brush to scrub mattress seams to remove bedbugs and their eggs before vacuuming.
Treatments to Eliminate Bed Bugs

- Vacuum your bed and surrounding area frequently. After vacuuming, immediately place the vacuum cleaner bag in a plastic bag and place in a garbage can outdoors.
- Encase mattress and box spring with a tightly woven, zippered cover to keep bedbugs from entering or escaping. Bedbugs may live up to a year without feeding, so keep the cover on your mattress for at least a year to make sure all bugs in the mattress are dead.
  - Sometimes, the only option for mattresses, box springs or couches is complete disposal of the item. Be certain that in getting rid of these items that the bugs do not re-infest in another part of the room.
- Repair cracks in plaster and glue down peeling wall paper to get rid of places bedbugs can hide.
- Get rid of clutter around the bed.
- Get rid of the bedbugs before getting a new mattress; otherwise the bedbugs may infest the new mattress.
- Placing sticky traps at the bed posts for 2 weeks will show if the bugs have been eliminated.
- Bed Bugs have no natural predators.
When in Doubt, call an Exterminator!!

- Exterminators are professionals skilled in eliminating pests, including bed bugs!
Exterminators!!

- Bedbugs are tolerant of many insecticides
- Few effective, residual treatments
- Targeted control – exterminators apply pesticides very narrowly
- Professional exterminators use chemical treatments; insecticides applied to all points where bedbugs are present
- Bugs must come into direct contact in order for treatment to be effective (bugs that walk across treatment but are not directly contacted can survive)
- Insecticides do not effectively kill bed bug eggs; the treatment will be applied a few times to ensure the eggs are dead
- Products must be safe for bedrooms
Exterminators!!

- High temperature treatment is an effective alternative to chemical treatment; they are effective in treating bed frames, box springs and mattresses (they blast heat of 140 to 150 degrees)
- Cold treatments are ineffective; bugs can live dormant in most cold settings
- Sealed vacuuming is effective; good approach to getting ‘wandering’ bugs; effective as long as the bag stays sealed
- Certain things, such as stuffed animals, books, linens, cannot be treated chemically
- They will not treat the mattresses or bedding unless the label specifically says chemical treatments are acceptable
Government Response to Bed Bugs

• Federal Government
  – Housing and Urban Development (HUD)
    • HUD has issued guidelines that prohibit the landlord from charging tenants in subsidized housing for the cost of bed bug treatment
  – Centers for Disease Control and Prevention (CDC)
  – U.S. Environmental Protection Agency (EPA)
UPCS Inspector Protocol

‘Effective February 1, 2016, inspectors are required to report the presence of existence of bedbugs at any property being inspected and enter any unit reported to have bed bugs that is part of the sample generated.’

Memo to HUD Certified Inspectors, James Cunningham, Inspector Administration
## Kansas Bed Bug Code

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
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<tbody>
<tr>
<td>K.A.R. § 4-27-2 Lodging Establishments- Imminent health hazard.</td>
<td>Classifies bedbugs as an imminent health hazard. Requires licensees of lodging establishments to cease operations of areas affected by an imminent health hazard and to notify authorities of its presence within 12 hours of discovery.</td>
</tr>
<tr>
<td>K.A.R. § 4-27-9 Lodging Establishments- Guest rooms.</td>
<td>Licensees may not rent guest rooms which have been infested by bedbugs. The licensee must report the infestation to the authorities within one business day of discovery.</td>
</tr>
<tr>
<td>N.R.S. 447.030 Public Accommodations - Extermination of Vermin.</td>
<td>Requires that any room in any hotel which is infested with vermin or bedbugs or similar things be thoroughly fumigated, disinfected and renovated until such vermin or bedbugs or other similar things are entirely exterminated.</td>
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West Virginia Bed Bug Code

W. Va. Code, § 16-6-16 Hotels and Restaurants – Bedbugs

Requires that in every hotel, any room infected with vermin or bedbugs shall be fumigated, disinfected and renovated until said vermin or bedbugs are extirpated.
Illinois Bed Bugs in Railcars Act

610 ILCS 85/1 to 85/4 Railroad Sanitation Act.

Requires railcars that will be occupied by the public be free from bedbugs. Requires regular cleaning and inspection of railcars. Provides for penalties.
Local Ordinances

- King County, Seattle WA Local Hazardous Waste Management Program in King County
- Central Ohio Bed Bug Task Force (COBBTF) Annual Summit
- Chicago Bed Bug Ordinance
- Cincinnati
- Texas AgriLife Extension Service
Central Ohio Bed Bug Task Force

The COBBTF is a voluntary organization aimed at educating residents. In 2008, the group created a strategic plan outlining the bed bug issues in its area and established different working groups that would tackle specific issues:

- * Hotline/Customer service response
- * Educational brochures and scripts
- * Training
- * Legal and enforcement issues
- * Research
- * Inspection Issues
- * Evaluation
Chicago Bed Bug Ordinance

• In December 2013, Chicago enacted an ordinance to define who is responsible for bed bug control in multi-unit buildings.
• The ordinance specifies that tenants must report a suspected bed bug problem within five days and landlords are responsible for hiring a pest control operator/professional.
  – Landlords are to educate, inform, inspect, treat, and:
    • *Attach a bed bug informational brochure to all new and renewing leases.
    • *Respond to any known or suspected bed bug infestation within ten days.
    • *Provide inspection and treatment services by a pest management professional.
    • *Inspection and, if necessary, treatment must be done in units adjacent to, above and below the unit suspected of infestation. This pattern is continued in the building until no evidence of bed bugs is found.
• The ordinance also specifies duties for tenants and condominiums. The ordinance is jointly enforced by the Department of Buildings and the Chicago Department of Public Health.
In King County, the Local Hazardous Waste Management Program is the informal lead for bed bug issues. The Public Health Department of Seattle and King County provides information on its website, but they refer to the King County Household Hazards Line as the contact resource. The hotline is staffed by a Hazardous Waste Management Program employee who offers callers tips on best practices and directs them to additional resources such as the Michigan Guide to Controlling Bed Bugs.
Toronto, CA Bed Bug Project

- Toronto created the Toronto Bed Bug Project (TBBP) in early 2008, which took on several projects including bed bug treatment pilot projects. After the projects, the city realized that treatment alone would not get rid of bed bugs and moved to a more integrated approach. Currently, the city employs public health officials who are responsible for environmental safety, and nurses who are responsible for the patients (people suffering from bed bugs). The city has funds available to help people with treatment preparation, a service that is vital to people who do not have a social support network or who are unable to attend to preparation because of a physical disability, mental health issue, or advanced age.
## Responsibilities of Each Party

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<thead>
<tr>
<th>Party</th>
<th>Potential Challenges</th>
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<tr>
<td><strong>Landlords</strong></td>
<td>Non-compliance: will not treat a unit or assist residents needing help to control bed bugs.</td>
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<tr>
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<td>Not educating the tenants on prevention and early notification.</td>
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<td>Selecting a pest control operator based solely on price, rather than on experience with bed bugs and IPM programs</td>
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<td>Recouping treatment costs by billing the tenant</td>
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<td>Does not re-inspect units after infestation</td>
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<tr>
<td><strong>Tenants</strong></td>
<td>Non-compliance: does not report an infestation</td>
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<tr>
<td></td>
<td>Afraid of eviction, personal property loss, and unaware of rights</td>
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<td></td>
<td>Unable to prepare for treatment</td>
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<td>Unwilling to let an inspector or pest control operator into the home</td>
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<td>Attempts at DIY pest control could lead to ineffective treatment and pose human health hazards</td>
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<td>Clutter and lack of cooperation with pest management professional</td>
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<tr>
<td><strong>Pest Control Operators</strong></td>
<td>Does not employ Integrated Pest Management strategies</td>
</tr>
<tr>
<td></td>
<td>Does not effectively treat unit</td>
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Resources for Further Information

- U.S. Environmental Protection Agency: [www.epa.gov/bedbugs](http://www.epa.gov/bedbugs)
- Rutgers University Bed Bugs in Multifamily: [http://njaes.rutgers.edu/pubs/fs1251/](http://njaes.rutgers.edu/pubs/fs1251/)
- Northeastern IPM Center at Cornell University: [www.stoppests.org](http://www.stoppests.org)
Questions or Comments?

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