Bed bugs – in homes, in schools, in childcare facilities, in medical centers, in fire stations!

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Making life healthier and happier where people live, learn, heal

Questions

1. What are bed bugs?
2. How do I determine if they are present?
3. Do they pose health risks?
4. How do I avoid taking them home from an infested home?
5. How should schools, childcare facilities, and medical centers respond to bed bug introductions?
6. What should first responders know?

WARNING

Bed bug life cycle

- Egg
- Nymph (5 stages)
- Adults

Need to feed on blood

21 to > 200 days
2) How do I determine if they are present?

Poop happens
They poop a lot

More poop

Fecal crust

Molted exoskeletons

Blood and smushed bugs
Smushed bugs

Some aggregations are obvious - some are not

Cryptic

You may not realize what you are looking at

In a home, where do bed bugs hide?

Where people rest

- Looks like mold
- But are actually bed bug aggregations

1 exterior
3 partial
16 internal

(Top 3 locations)

- a) box springs
- b) couches / chairs
- c) mattresses
- d) night stand / dresser
- e) baseboards and moldings
- f) head boards and bed frames
- g) walls / ceilings
- h) TV remotes
- i) curtains / drapes
- j) toilets
Some people “rest” on the loo

Places people rest

- 85% of bed bugs are found in or near the bed
- mattress, box spring, bed frame, and headboard
- Inspect seams, under buttons and labels

Not just the bed

May NOT be obvious

Bed bug population increases

40 bed bugs are in a 70°F room on May 2. By Nov 2 how many are there? 5,909
Combine inspection with vacuum cleaning
Use a brush, flashlight, canister vacuum with a crevice attachment

How are they arriving in hospital?
So how paranoid should you be?

Bed bugs hitchhike
- Bugs fall off clothing and personal items and may be found roving on surfaces
- Transfer from one person to another is possible but unlikely

They move and get moved around
- Crawl at about an inch/second & Hitchhike

Who are they after?
- People
- Rarely pets

Can You Get Bed Bugs On An Airplane? Here's How To Avoid This Unfortunately Very Real Possibility
Anyone can get bed bugs

3) Do they pose health risks?

Reactions to bites

- Bites may occur in lines - usually on exposed skin
- Adults over 65 years of age tend to react less or not at all

Bite reactions

Another reason for a “Selfie”
Most bite reactions develop in 0-14 days.

**Bed bugs and health impacts**

- Annoying biting pests causing swollen, itchy bumps
- Sleep loss
- Anxiety, stress, worry, desperation, and depression
- Blood loss, anemia

**Bed bugs are not known to transmit disease causing pathogens effectively outside of lab studies**

**Moving and personal item loss**

- Financial burden
- Psychological stress
- Physical stress
- Loss of residents' sense of self and home
## Bed bug costs

<table>
<thead>
<tr>
<th>Service</th>
<th>Cost Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pest control services</td>
<td>$400-5000 location and severity of infestation</td>
</tr>
<tr>
<td>Encasements</td>
<td>$100-250 per bed</td>
</tr>
<tr>
<td>Laundering</td>
<td>$50-100 per person</td>
</tr>
<tr>
<td>Monitoring devise</td>
<td>$25-75 per room</td>
</tr>
<tr>
<td>Vacuum and/or dry-steamer</td>
<td>Vacuum $200-450 + dry-steamer $300-550</td>
</tr>
<tr>
<td>Your sanity</td>
<td>$priceless$</td>
</tr>
</tbody>
</table>

## Extra dead

- 57
- 58

## Pesticides applied by residents

- Off-label
- Excessive
- No PPE
- Hazardous material cleanup

## Foggers “bug bombs”
4) How do I avoid taking them home from an infested home?

- It is quite possible to work in infested homes without taking bed bugs home
- We do it all the time

If you know or suspect bed bugs are a problem:

- Remain calm!
- Wear protective booties
- Carry only essential items in
- Do not sit on upholstered furniture or bed
- Sit on hard chairs or bring your own chair
- Avoid placing anything on upholstered furniture, bedding, or on carpeted floors
- Coveralls or a Tyvek® suit if home has a severe infestation or chemical residues

Be a keen observer

- Only finding live or recently captured bed bugs indicates an active infestation
If you interact with children:

- Use a **white sheet** to place on the ground
- Do NOT reuse the sheet if you are visiting multiple homes
- Double bag the sheet after use
- Having a **clothes dryer at work** is a convenient way to heat-treat sheets
- **Bed bug infestations alone** are not grounds to place a child in care

After leaving:

- **Record the infestation** in your notes
- When you return to your vehicle, remove booties immediately and double seal in **plastic bags**
- If you were wearing coveralls or a Tyvek® suit peel it off leaving it inside out and double bag it
- Check your clothing
- If you find a bug on yourself, place inside a **zip-lock bag** or throw in outdoor dumpster

**Check yourself**

Bed bug

**Strip & sprint**

**Showering removes bugs from your person**

**Launder**

- As far as possible, undress into the washer
- Wash, then dry clothes (or dry only) on high heat in the dryer for at least 40 minutes
- Leave work items such as bags, shoes, etc. outside the home, such as in the garage
- Never store these indoors!
Heat kills bed bugs best of all!

- Items can be placed in a hot dryer for 40 minutes – items must be completely dry
- Washing only, does not kill bed bugs

Inspect and monitor your home

Encasements

- Where the zipper closes and the zipper teeth are vulnerable to bed bug escape

Not all covers protect

Passive monitors/traps

- Blackout trap
- Climb up interceptors
- Bed moat
- CVT trap

5) How should schools, childcare facilities, and medical centers respond to bed bug introductions?
**Minimize the likelihood of bed bug transfer**

- Between students
- From school/childcare center to home

**Bed bugs in schools and childcare centers generally do not thrive**

- Most reports are roving bed bugs
- Rarely bed bug infestations occur
- Childcare settings are more prone

**Bed bugs thrive in locations where people rest regularly for prolonged periods of time**

- Dormitories
- Teachers lounge
- Reception

**Class and student equipment**

**Bed bugs brought into school**

- Clothing donation requests
- Blankets and towels for animal shelters
- Student supplies
- School trip gear
Students should NOT be sent home

- Bed bugs take months to remediate
- If parents can not work - less able to remediate infestations
- Long-term infestations more common
- Students CAN attend school without bed bugs

Facilitate attendance

You find a bed bug - stay calm

- Notify individual or responsible guardians
- Send helpful literature home
- Notify staff
- Confirm Associated with person/belongings
- Found on surface
- Notices to staff
- Notify custodians

Environment

- Have trained individuals inspect
- Deep clean
- Reduce clutter

Individual

- Work with individuals responsible for home environment
- Help individuals receive bed bug treatments

Especially custodians, medical care staff and teachers

Infections require pest management specialists to eradicate
1. Managing “stuff” from home

2. Challenging situations
   - Wheelchairs
   - Oxygen concentrators
   - Medical beds

6) What should first responders know?
   - Bunker gear should be frozen to kill bed bugs
   - How to ID bed bugs

Fire fighters: https://www.bedbugs.umn.edu/response-kit-firefighters
Fire fighters are not likely to see this

How to take precautions returning home

1 in 4 people have experienced bed bugs

So what the heck are we doing about that?

Overwhelming need for community education

Bed bug policy and notification materials

http://westernbedbugipm.ucanr.edu/Audience_Specific_Resources_355/Schools/

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