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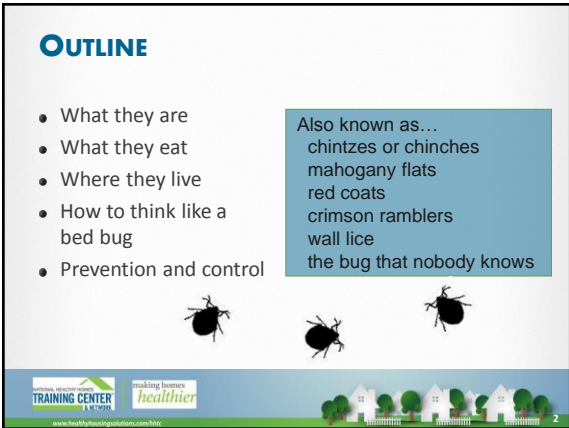
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### WHY THEY'RE BACK

- Change in pesticide availability
- Change in pesticide use patterns
- More travel/ mobility of people
- More infested locations
- Pesticide resistance
- Lack of preparedness of society in general

www.healthyschoolsolutions.com/nc

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### BED BUGS ARE HEALTH HAZARDS

Bed bugs do not transmit disease, but they are a pest of significant public health importance

- Cause secondary infections after people scratch their bed bug bites
- Result in stress, loss of work, loss of productivity, loss of sleep, and financial burden
- Are unwelcome in our homes and workplaces

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### BED BUG LIFE CYCLE

**Fed**                      **Unfed**

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### BED BUG BEHAVIOR

- Most active at night
- Hide in cracks and crevices, often in groups
- Cannot fly, jump, or burrow into skin...they crawl
- Hitchhike on coats, bags, furniture, wheelchairs...



Bed bug crawling into a screw hole to hide



making homes healthier



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### WHAT BED BUGS EAT AND DRINK

#### Blood



making homes healthier



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### CAN BE CONFUSED WITH...

- Ticks
- Cockroach nymphs
- Other kinds of bug bites
- Allergic reactions to chemicals



Tick



Mosquito Bites



Cockroach Nymph



Bat Bug



Spider Beetle



making homes healthier



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## SIGNS OF BED BUGS

- Bites
- Fecal spots
- Shed skins
- Dead bed bugs
- Live bed bugs



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## BITES

- Bed bugs cannot be confirmed by bites alone—bites do not show up on everyone
- Live bed bugs must be found



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## FECAL SPOTS

- Fecal spots are bed bug droppings
- Different from frass—frass is gritty, fecal spots are smooth.
- A current bed bug infestation cannot be confirmed by fecal spots alone
- Live bed bugs must be found



A bad infestation



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### SHED SKINS

Bed bug signs on a mattress seam



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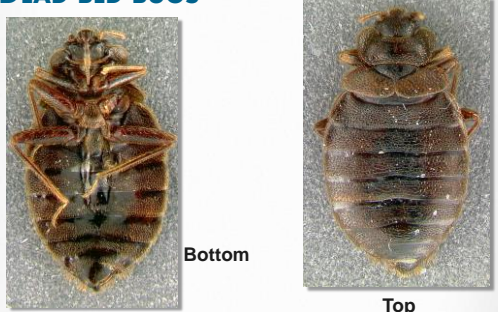
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### DEAD BED BUGS



Bottom

Top



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### WHERE BED BUGS LIVE

- In the building
- In any crack or crevice where a credit card edge could fit
- In anything near where people rest



Mattress piping



Switch plates



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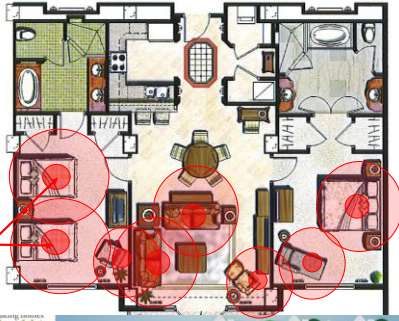
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### WHERE BED BUGS LIVE

Beds, sofas, bedside tables, recliners, picture frames...

● = Hot Spot



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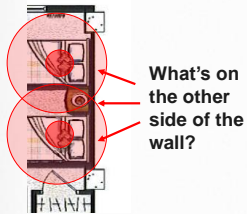
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### HOW DO BED BUGS SPREAD?

- Actively crawl along wires, pipes, and under doors
- Passively on anything coming from an infested unit (furniture, backpacks, laundry...)



What's on the other side of the wall?



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### AREAS AT-RISK FOR INTRODUCTION AND INFESTATION

- Introduction is likely where people
  - ◆ frequently travel
  - ◆ set down personal belongings
  - ◆ sit or lay down for long periods of time
- Infestation is likely where bed bugs can
  - ◆ Crawl (upholstered furniture or bedding)
  - ◆ Feed on a person for 5 minutes without being detected
  - ◆ Hide in cracks or folds



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## INSPECTION

- Always use a flashlight
- If bed bugs are found, inspect all adjacent units
- Two types:
  - Visual
  - Scent detecting canine



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## MONITORING

- Trap and kill bed bugs
- Determine how bad the infestation is
- Two types
  - Passive
  - Active



Passive, moat-style interceptor



Photo credit: FMC Corp.

Active, plug-in trap



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## GOT BED BUGS? NOW WHAT?

- If found and controlled early in the infestation, the spread of bed bugs can be stopped
- Early detection and rapid response are critical to building-wide bed bug management
- Only PMPs apply pesticides



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### IF SOMEONE FINDS A BED BUG

Document all observations

Rapid response plan:

- ◆ Save the insect
- ◆ Report the problem
- ◆ Don't apply pesticides or move things around
- ◆ Prevent carrying the bed bugs to other places
- ◆ Have the PMP inspect the unit and adjacent units




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### ENCOURAGE A COMMUNITY RESPONSE

- Educate everyone
- Destroy discarded items
- Housing should take the financial burden off of residents by providing
  - ◆ mattress encasements
  - ◆ monitors
  - ◆ large bags for furniture removal




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### PREPARE BEFORE YOU HAVE TO

- Once bed bugs are present, you don't want to disturb the area
- Ideally, residents routinely
  - ◆ inspect with a flashlight
  - ◆ launder bedding
  - ◆ vacuum
  - ◆ maintain their unit according to housekeeping standards




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### PREVENT INTRODUCTION AND SPREAD: RESIDENTS

- Manage items that come or go from the home
  - Keep coats, backpacks, purses, and bags off beds, recliners, and sofas at home and while out
  - Inspect used furniture carefully before bringing it home—avoid it if possible
- Look for signs when sleeping away from home




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### ADVICE FOR STAFF, HEALTH AIDES, AND CONTRACTORS

- In units:
  - Avoid sitting or placing items on potentially infested surfaces
  - Wear a protective layer when moving infested items
- In the main office/community areas:
  - Replace fabric-covered furniture that has many crevices with plastic or metal items
  - Have residents set their belongings in plastic totes during meetings




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### WHO IS RESPONSIBLE?

- The PMP gives all instructions after inspection
- Assign realistic preparation responsibilities, taking into consideration financial, physical, and mental limitations of those involved
- Instructions are ideally carried out by the person who owns the materials

If they are unable

- Family & friends
- Building staff
- Aides
- Nonprofit groups
- Contracted companies

If they are unwilling

- Fall back on lease, job description, or other existing formal agreement




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### CLUTTER IMAGE RATING SCALE COMPULSIVE HOARDING AND ACQUIRING WORKBOOK

- If preparation is required, communicate expectations to the resident using a visual rating scale




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### TREATMENT OPTIONS

- ✘ Vacuuming
- ✘ Isolation
  - Encasements
  - Clear bags
  - Closed plastic containers
  - Make the bed an island
- ✘ Freezing
  - Liquid CO<sub>2</sub>
  - Chest freezer
- Heat
  - ◆ Clothes dryer
  - ◆ Steam
  - ◆ Container
  - ◆ Whole unit
- Pesticides
  - ◆ Spray
  - ◆ Dust
  - ◆ Fumigation

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### USE A MATTRESS ENCASEMENT

- Cover mattresses and box springs
- Ensure a snug fit, zip, seal, and check for rips
- Leave it on
- Cover any sharp points on the bed frame with tape or felt



**Mattresses and furniture don't have to be thrown out!**

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### THE PMP'S ROLE

- ALWAYS thoroughly inspects the reporting unit and the adjacent areas
- Provides site-specific preparation and follow-up instructions in multiple languages
- Follows the label
- Returns to inspect and treat if bed bugs are found



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### ONLY PMPs USE SPRAYS

- Sprays are not effective when used by homeowners for bed bug control
- Over-the-counter-sprays and foggers cause the bugs to scatter so the problem becomes harder to deal with



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### A REVIEW OF WHAT YOU SHOULD DO

- Educate everyone about what they can do to prevent bed bugs
- Prepare before bed bugs are reported by minimizing clutter and installing encasements and monitors
- Respond rapidly with a professional before the infestation grows and spreads



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**QUESTIONS?**



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making homes  
*healthier*



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