

Bed Bug Management Early Detection Rapid Response

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Outline

- 🐛 Integrated Pest Management (IPM)
- 🐛 Bed bug basics
- 🐛 Setting-specific bed bug management

IPM sets you up for success

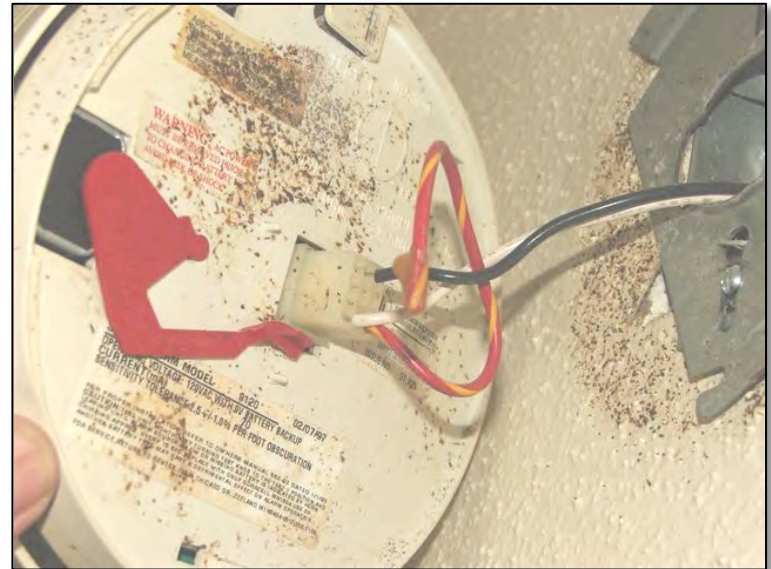
Building-wide IPM program controls all pests

- 🐛 Educate everyone to do their part
- 🐛 Inspect and monitor
- 🐛 Put a plan in place for rapid response
- 🐛 Evaluate effectiveness

Don't forget other pests

Pests...

- 🐛 Decrease job satisfaction
- 🐛 Lower resident satisfaction
- 🐛 Bite and sting
- 🐛 Contaminate food
- 🐛 Transmit disease
- 🐛 Violate housing codes
- 🐛 Trigger/cause asthma and allergies
- 🐛 Lead people to overreact and ignore pesticide labels

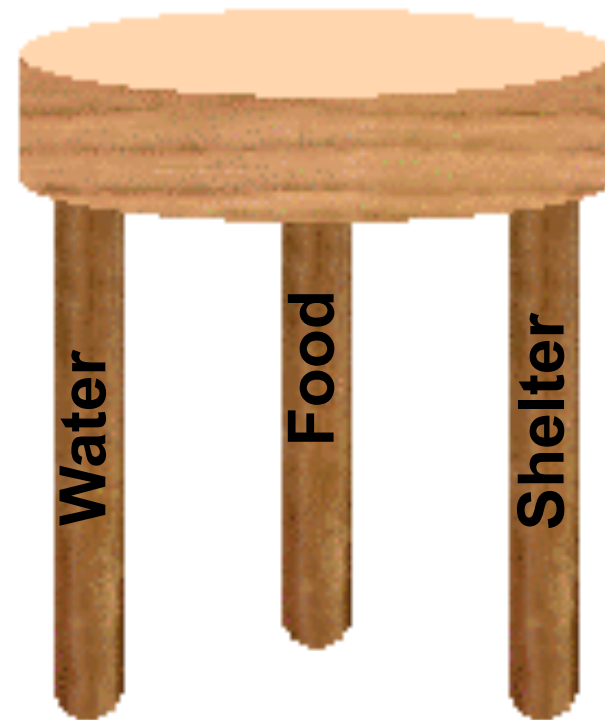


Cockroach infestation in a smoke detector

What all pests need

- Food
- Water
- Shelter

...and access



IPM defined

In a structural setting, an IPM program consists of

1. inspection,
2. identification,
3. establishment of threshold levels,
4. employment of two or more control measures (which may be cultural, mechanical, biological, or chemical), and
5. evaluation of effectiveness

(Adapted from the National Pest Management Association's Urban IPM Handbook, 2006)

Bed bug basics

What is a bed bug?

- A blood-sucking insect
- Flat
- Wingless
- Reddish-brown after feeding



Adult bed bug feeding on a human

Bed bug life cycle



Unfed



Fed



Bed bug behavior

- 🐛 Most active at night
- 🐛 Usually feed at night
- 🐛 Hide in cracks and crevices, often in groups
- 🐛 Cannot fly, jump, or burrow into skin...they crawl
- 🐛 Hitchhike on bags, furniture, and coats
- 🐛 Crawl along wires, pipes, or floors



Bed bugs often hitchhike on furniture where they went to hide

Bed bugs are health hazards

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

- cause secondary infections after people scratch their bed bug bites;
- result in stress, loss of work, loss of sleep, and financial burden; and
- are unwelcome in our homes and workplaces.

Can be confused with...

- 🐛 Ticks
- 🐛 Cockroach nymphs
- 🐛 Other kinds of bug bites



Tick



Mosquito Bites



Cockroach Nymph



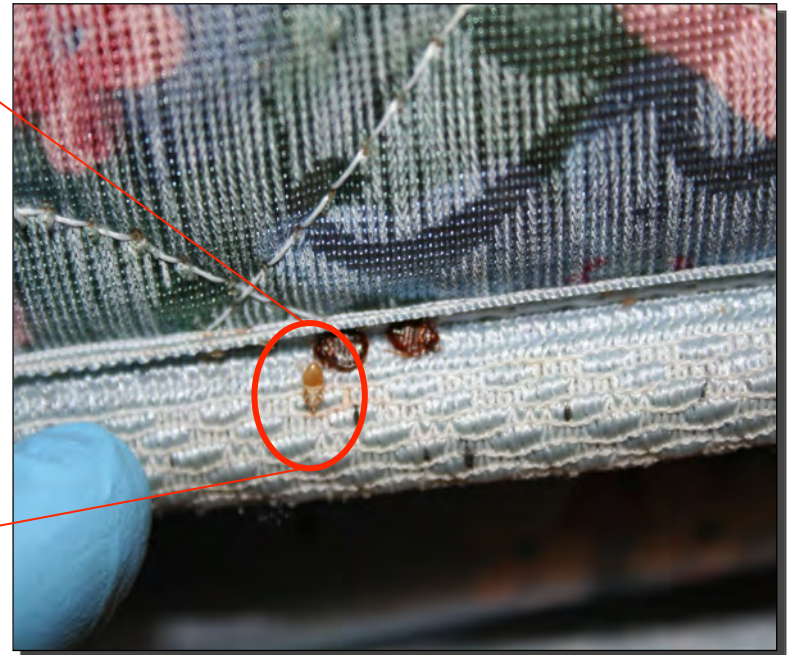
Bat Bug



Spider Beetle

Signs of bed bugs

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



Bed bug signs on a mattress seam

Bites

- Bed bugs cannot be confirmed by bites alone.
- Live bed bugs must be found.



Fecal spots or "blood spots"

- Fecal spots are bed bug droppings
- Bed bugs cannot be confirmed by fecal spots alone.
- Live bed bugs must be found.



A bad infestation

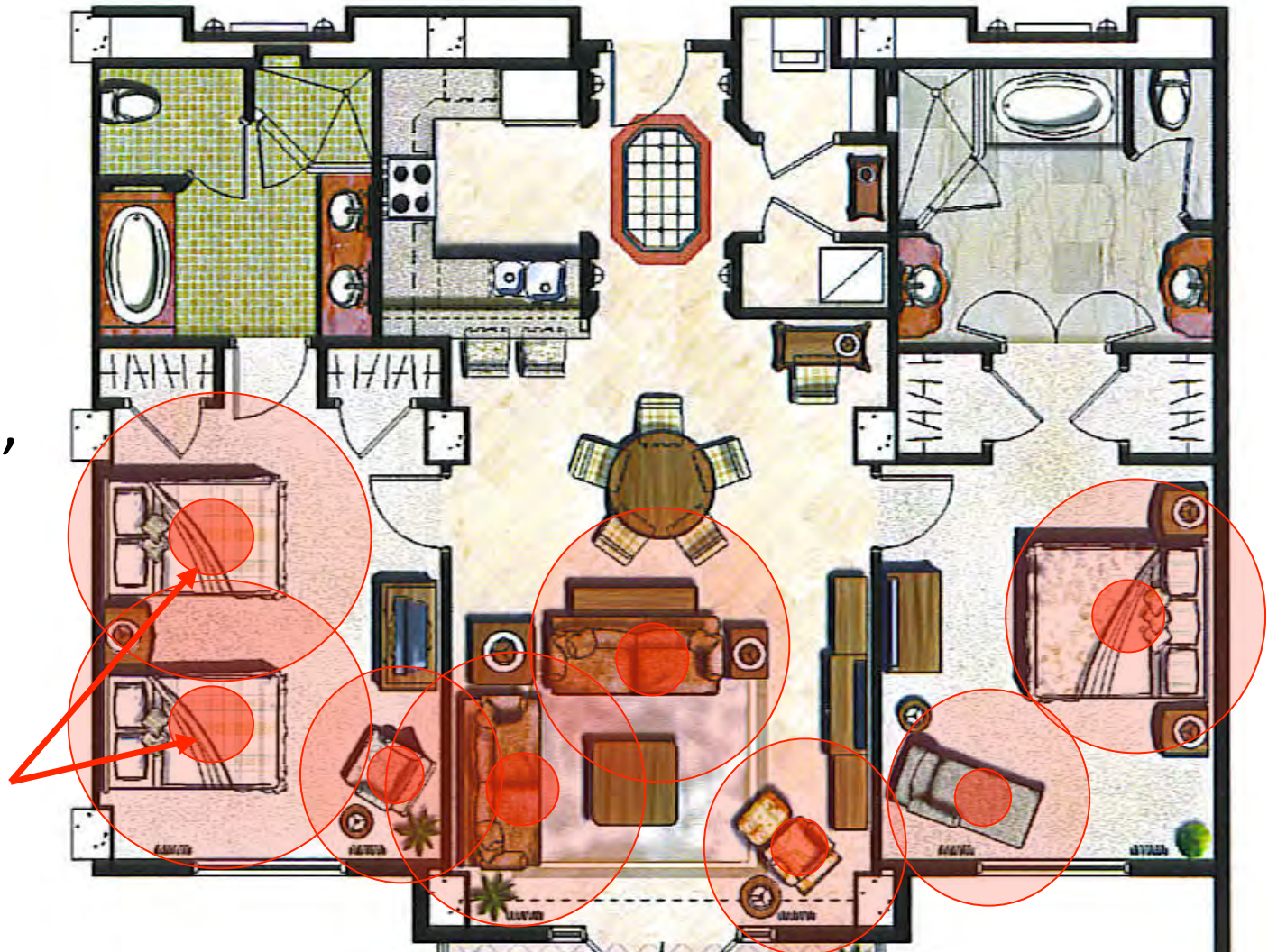


The start of an infestation

Where bed bugs live

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

● = Hot Spot



Inspect beds



Inspect couches

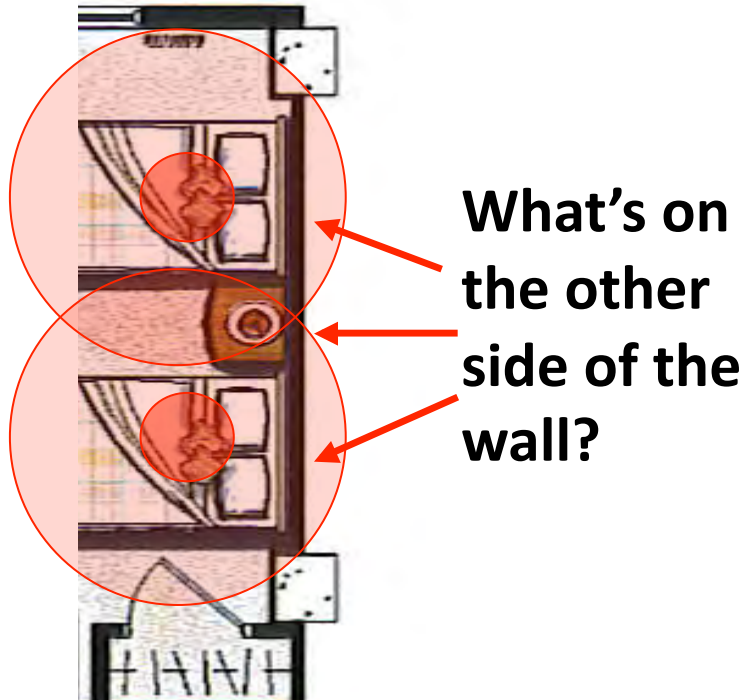


Inspect chairs



How do bed bugs spread?

- Actively through wall voids along wires and pipes or under doors
- Passively by hitchhiking on anything coming from an infested unit



Inspect wheelchairs



Got bed bugs? Now what?

If found and controlled early in the infestation, the spread of bed bugs can be stopped.

The first responses should be to:

- 🐛 Catch an insect for identification
- 🐛 Report the problem—keep records
- 🐛 **Not spray or bomb—leave this to the PMP**
- 🐛 Prevent carrying the bed bugs to other places



Management methods

🐛 Inspections

🐛 visual

🐛 canine

🐛 Monitors

🐛 active

🐛 passive

🐛 Non-Chemical Treatment Methods

🐛 Pesticides



Evaluate the effectiveness

- 🐛 Keep records
- 🐛 If bed bugs are found, where did the management plan fail?
 - 🐛 Neighboring units not addressed
 - 🐛 Poor preparation led to inadequate treatment
 - 🐛 Rushed PMP led to inadequate treatment
 - 🐛 Lack of education led to introduction
 - 🐛 The infestation was never fully eliminated

Furniture recommendations

Light color



Metal, glass,
or plastic



Not touching
other furniture
or walls



Basic recommendations for housing

- Building-wide inspection and monitoring
- Education for staff and residents aimed at preventing introduction and spread
- Ongoing relationship with a qualified pest management professional (PMP)



How to prevent getting bed bugs

Advice for residents:

- 🐛 Keep coats, backpacks, purses, and bags off beds, recliners, and sofas.
- 🐛 Don't bring home used furniture.
- 🐛 Look for signs before sleeping.



How to prevent bed bugs

Advice for staff

- 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 furniture with fabric and many joints with plastic or metal items
 - Have residents set their belongings in plastic totes during meetings



How to prevent giving bed bugs

- Keep items carried out of the home isolated in plastic bags or bins outside of bedrooms and living rooms
- Kill bed bugs on items using
 - Careful inspection and physical removal
 - Laundry: 30 minutes in a hot dryer
 - Portable heat chamber
 - Commercial steamer
 - Freezing takes multiple days...



Basic recommendations for schools

It's still IPM...

- 🐛 Inspect and monitor
- 🐛 Identify any pest found
- 🐛 Convene the IPM team to determine the necessary level of response
- 🐛 Take action
- 🐛 Evaluate results



Understand the risk of bed bugs in schools

- Where are bed bugs most likely to be introduced?
- What about these areas are conducive to infestation?
- What can be done to prevent introduction and make the at-risk areas less conducive?



Do not

- 🐛 Close the school
- 🐛 Send the child home
- 🐛 Allow untrained staff to apply pesticides



Do

- Inspect items that come to and from school
- Implement storage practices that reduce the risk of bed bugs spreading
 - plastic totes
 - plastic bags
 - inspection
- Work with parents to ensure management is occurring at home



Educate yourself

-  "What's Working for Bed Bug Control in Multifamily Housing"

[www.nchh.org/Portals/0/Contents/
bedbug_report.pdf](http://www.nchh.org/Portals/0/Contents/bedbug_report.pdf)

-  NPMA's Best Management Practices

www.bedbugbmps.org

-  Federal Bed Bug Summit broadcast webinar

[http://www.epa.gov/pesticides/ppdc/bedbug-
summit/webinar-instruction.pdf](http://www.epa.gov/pesticides/ppdc/bedbug-summit/webinar-instruction.pdf)

Questions?