BED BUG MANAGEMENT FOR AFFORDABLE HOUSING PROVIDERS



Healthy Housing Solutions Inc.

WELCOME TO BED BUG MANAGEMENT FOR AFFORDABLE HOUSING PROVIDERS

Your producer is Susan Aceti, Senior Project Manager, Healthy Housing Solutions



If you do not have the case study document, please:

- Click on the Materials tab on your GoToTraining Control Panel
- Locate and download the file called "Case Study Fran Stuart"







Funding for this course provided by the U.S. Department of Housing & Urban Development and the Northeastern IPM Center.

Healthy Housing Solutions Inc.

CAN YOU HEAR ME NOW?

Don't let audio problems trip you up -

- Review Possible Solutions to GoToTraining Audio Problems.
- Also, if you talk and everyone seems to be ignoring you:
 - You have probably muted your phone or computer microphone. Just unmute!





THIS IS ONLY A TEST

Message just the moderator:

"My favorite pet is a _____"







THIS IS ALSO ONLY A TEST

Message all participants:

"My name is _____,

I am located in_____





WHY ARE YOU HERE?

Yes, really, why are you here? What made you take this course?



THREE REASONS TO MANAGE BED BUGS







Wasting money



Lawsuits







INFESTATIONS ARE ON THE RISE!

AS ARE RELATED CLASS ACTION LAWSUITS

LIKE IT OR NOT,
YOU'RE IN THE BED BUG BUSINESS!







BED BUG LAWSUITS

- Baltimore, MD, 2011: Individual resident awarded \$40,000 for delayed response.
- Annapolis, MD, 2013: Individual resident awarded \$800,000.
- Des Moines, IA, 2014: Class action lawsuit.
 Residents sued for \$1.4 million, awarded
 \$2.45 million.
- Los Angeles, CA, 2017: Sixteen renters awarded a total of \$3.5 million.





AND YOUR TRAINER IS...

Richard Cooper:

Director of Special Programs for Terminix and

Technical Director for Cooper Pest

Solutions



COURSE OUTLINE

In a nutshell:



8 problems, 8 solutions







HOW FREAKED OUT ARE YOU?

What is your comfort level with bed bugs?

POLL









PROBLEM #1

LACK OF INFORMATION AND MISINFORMATION







SOLUTION #1

EDUCATE YOURSELF, YOUR STAFF, AND YOUR RESIDENTS

YOU

STAFF

RESIDENTS















STAFF MEMBERS TRAINING:



- Bed bugs are a reality in multifamily housing.
- Recognize signs and symptoms.
- Assist residents who have infestations.
- How to handle yourself in an infested apt.
- Support YOUR bed bug policies and procedures.

Treat residents with dignity and respect!





WHAT IS CRITICAL FOR RESIDENTS TO KNOW?



- 1. Don't be ashamed or embarrassed.
- 2. No negative consequences from management.
- 3. Avoid introducing bed bugs.
- 4. Recognize signs of bed bug activity.
- 5. What to do and not do.

Reporting bed bug activity is KEY to preventing spread!







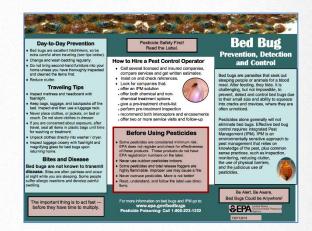
EDUCATE RESIDENTS!

RESIDENTS

Three Steps

- 1. Lease signing or renewal
- Resident meetings, education sessions or 1-on-1
- 3. Posters and brochures









PREVENTION: AT THE FRONT DOOR



- No "curb shopping"
- Inspect secondhand furniture and clothing.
- Hot launder 2nd hand clothing



DO YOU OFFER ASSISTANCE TO RESIDENTS TO INSPECT INCOMING FURNITURE?





PREVENTION: WITHIN THE BUILDING



Be vigilant when using shared laundry facilities - transport items in plastic bags.



A dryer on high heat (> 122°) can kill bed bugs.





PREVENTION: WITHIN THE BUILDING



Property management should assist in disposal of infested furniture.



DO YOU HAVE A PROCEDURE IN PLACE TO HELP RESIDENTS WITH DISPOSAL OF INFESTED ITEMS?





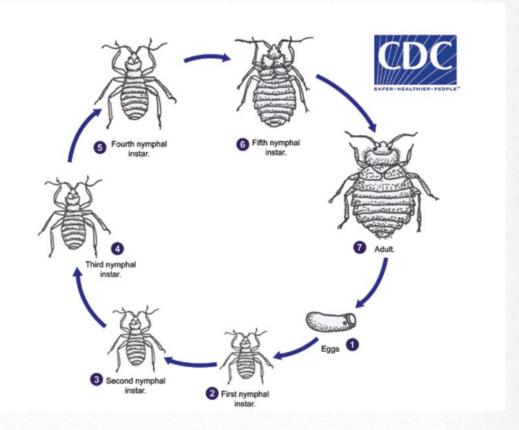
KNOW THE BUGS







STAGES OF DEVELOPMENT







PROPER IDENTIFICATION





Tick









Flea







Psocid



IS THIS EVIDENCE OF BED BUGS?





Dermestid larvae (Carpet Beetle)



Caste skin of Dermestid larvae











ARE THESE BED BUGS?



Bed bug nymphs





IS THIS EVIDENCE OF BED BUGS?





Shed skins of bed bugs













Bed bug





IS THIS EVIDENCE OF BED BUGS?





Cockroach feces



Bed bug feces







IS THIS EVIDENCE OF BED BUGS?





Bed bug eggs and fecal spotting





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WHICH OF THESE INDICATE THE PRESENCE OF BED BUGS?

bed bug bites



2



bed bug eggs



bed bugs and spotting



bed bug nymph



IF YOU ARE EVER UNSURE CONSULT A PROFESSIONAL







SUSPECTED OR CONFIRMED BED BUGS



Residents must understand importance of:

- Reporting known or suspected activity immediately!
- Having the unit treated by a trained professional.
 - > For effective treatment
 - > For their own safety



PRODUCTS THAT DO NOT WORK





"Over the counter" pesticides either don't work or provide contact kill only.

- Pyrethrins
- Pyrethroids
- Resistance to insecticides





OTHER PRODUCTS THAT DON'T WORK



- "All Natural", "Non-toxic" products
 (essential oils i.e. tea tree or lavender oil)
- Home Remedies:

rubbing alcohol	talcum powder
mothballs	baking soda
dryer sheets	boric acid
ultrasonic devices	









WHAT ELSE DOESN'T WORK!



Foggers (Bug Bombs) release aerosol into the air. Many use pyrethroids.

How effective do you think that is?

Answers:

1. Not very, bed bugs hide most of the time so the spray doesn't reach them or kill them.

And

2. Not very, even if they aren't hidden, most bed bugs are resistant to pyrethroids.



Journal of Economic Entomology, 2012 Jun; 105(3):957-63.

IF A LITTLE DOESN'T WORK, I'LL JUST USE A LOT . . .





10 GALLONS IN A ONE BEDROOM APARTMENT WITHIN **12** MONTHS



3 BUG BOMBS IN AN EFFICIENCY (1 IS MORE THAN NEEDED)





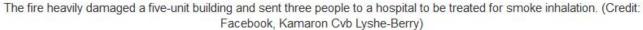


IF THIS DOESN'T WORK, I'LL JUST USE SOMETHING ELSE. . .



If one product doesn't work, people may turn to unsafe products. This happened when a Cincinnati woman tried to kill bed bugs with rubbing alcohol.







ONLINE RESOURCES FOR STAFF AND RESIDENT TRAINING

RES MUNICIES

SEE POST-TRAINING JOB AID









Day-to-Day Prevention

- Bed bugs are excellent hitchhikers, so be extra careful when traveling (see tips below).
- Change and wash bedding regularly.
- Do not bring second-hand furniture into your home unless you have thoroughly inspected and cleaned the items first.
- Reduce clutter.

Traveling Tips

- Inspect mattress and headboard with flashlight.
- Keep bags, luggage, and backpacks off the bed. Inspect and then use a luggage rack.
- Never place clothes, or jackets, on bed or couch. Do not store clothes in dresser.
- If you are concerned about exposure, after travel, seal all items in plastic bags until time for washing or treatment.
- Unpack clothes directly into washer / dryer.
- Inspect luggage closely with flashlight and magnifying glass for bed bugs upon returning home.

Bites and Disease

Bed bugs are not known to transmit disease. Bites are often painless and occur at night while you are sleeping. Some people suffer allergic reactions and develop painful swelling.

The important thing is to act fast — before they have time to multiply.

Pesticide Safety First! Read the Label.

How to Hire a Pest Control Operator

- Call several licensed and insured companies, compare services and get written estimates.
- Insist on and check references.
- Look for companies that:
- offer an IPM solution
- offer both chemical and nonchemical treatment options
- give a pre-treatment check-list
- perform pre-treatment inspection
- · recommend both interceptors and encasements
- · offer two or more service visits and follow-up

Before Using Pesticides

- Some pesticides are considered minimum risk.
 EPA does not register and check for effectiveness of these products. These products do not have
 EPA registration numbers on the label.
- Never use outdoor pesticides indoors.
- Some pesticides and total release foggers are highly flammable. Improper use may cause a fire.
- Never overuse pesticides. More is not better!
- Read, understand, and follow the label-use directions

For more information on bed bugs and IPM go to: www.epa.gov/bedbugs Pesticide Poisoning: Call 1-800-222-1222

Bed Bug

Prevention, Detection and Control

Bed bugs are parasites that seek out sleeping people or animals for a blood meal. After feeding, they hide. It is challenging, but not impossible, to prevent, detect and control bed bugs due to their small size and ability to squeeze into cracks and crevices, where they are often unnoticed.

Pesticides alone generally will not eliminate bed bugs. Effective bed bug control requires Integrated Pest Management (IPM). IPM is an environmentally sensitive approach to pest management that relies on knowledge of the pest, plus common sense practices, such as inspection, monitoring, reducing clutter, the use of physical barriers, and the judicious use of pesticides.

Be Alert, Be Aware, Bed Bugs Could be Anywhere!

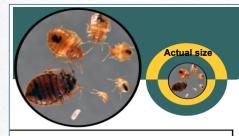


735F12013

Website information on post-training job aid.







Bed Bug Identification

- Eggs: tiny, white, and glued to surfaces.
- ♦ Nymphs are light colored, from 1/16th".
- ♦ Adults are rusty red, apple seed sized, 3/8".
- Six legs, oval, flattened from top to bottom.
- ◆ Do not jump or fly, but are good runners.
- They tend to congregate together.
- They can live several months without a blood meal.
- Important: Capture several examples of the pest and have them identified by a qualified expert before taking any further actions.

Signs of Bed Bugs

- Small, whitish shed skins and rusty spots on bed linens which are droppings and blood stains from crushed bugs.
- Live bed bugs of any size.
- Eggs and casings among droppings or in crevices where adults hide.
- An offensive, sweet, musty odor from the bed bugs when infestations are severe.
- You may have red, itchy welts or rashes from bites; however, bite marks are not a reliable indication of a bed bug infestation.

Bed bugs are no one's fault. They don't discriminate anyone can have them. Early detection and prompt response will avoid larger problems.

Where do Bed Bugs Hide?

- Mattresses, box springs, bed frames and head boards (along seams and piping, under handles and labels).
- Under the thin dust cloth on bottom of box spring.
- Seams and fabric folds in curtains and under furniture, including chairs and sofas.
- Under wall-to-wall carpeting and padding.
- Anywhere there are cracks, crevices or nail holes in walls, and under wood moldings and baseboards.
- Under loose wallpaper and seams, and where ceiling and wall meet.
- In and behind picture frames and mirrors.
- Clothing and clutter stored in closets, under beds and elsewhere.
- Inside switch plates, electrical outlets, clocks, computers, phones, televisions and smoke detectors.
- On and in recently used luggage, backpacks and bags.



Don't pass bed bugs onto others!

Caulk cracks and spaces

Interceptor under leg



Integrated Pest Management

1. Physical Control Methods

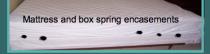
- Vacuuming reduces bed bug populations.
 Clean and vacuum bed bug prone areas daily.
 Immediately seal and dispose of vacuum bag.
- Install encasements on mattress and box spring.
- Install bed bug interceptors under bed and furniture legs.
- Make the bed an island: Keep bed away from wall and do not let bedding touch the floor.
- Remove clutter where bed bugs can hide.
- Isolate infested items in sealed plastic bags or containers. Treat items in hot dryer for 30 min.
- Clean and scrub seams / folds with detergent.
- Seal cracks where bed bugs can hide.
- If you live in an apartment or other multi-family dwelling, and you see a bed bug, contact your landlord immediately.

2. Non-chemical Controls

Items that cannot be washed or dried may be steamed, heated or frozen using specialized equipment. Raising the indoor temperature with a thermostat or space heaters will not work, nor will placing items in the home freezer. Contact a bed bug management professional for advice.

3. Pesticide Controls

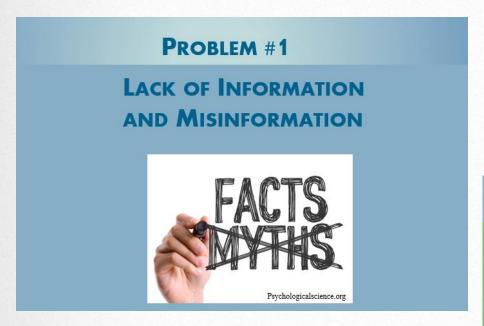
Pesticides are an important part of the IPM toolbox. Please view cautions listed — over.



Website information on post-training job aid.



REMEMBER THE PROBLEM AND THE SOLUTION











QUIZ #1

- 1. From the list, identify two messages we discussed that are important for you and your staff to convey to residents so they help your efforts.
- 2. From the list, identify two things that residents can <u>do</u> to prevent the spread of bed bugs.
- 3. Identify three products that do NOT work on bed bugs.







#1 Messages to convey to residents:

- 1. No reason to be ashamed or embarrassed.
- 2. No negative consequences from management.
- 3. Know signs of bed bug activity.
- 4. Report suspected activity immediately.
- 5. Reporting is KEY to prevent spread.
- 6. Prevention at the front door and within the building
- 7. Products that don't work
- 8. How using a lot of something rather than a little is not a possible solution.







- #2 Things that residents can <u>do</u> to prevent the spread of bed bugs.
 - 1. Do not "curb shop"
 - 2. Inspect second hand furniture and clothing and treat if necessary
 - 3. When laundering to kill bed bugs, transport items in plastic bags, remove clothes directly from dryer and place in bag, fold at home.
 - 4. Report any activity as soon as possible.

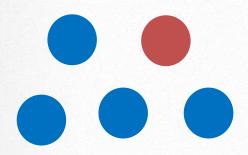


#3 Products that do NOT work on bed bugs.

- 1. Most pesticides that contain pyrethroids
- 2. Natural products such as tea tree or lavender oil
- 3. Baking soda
- 4. Boric acid
- 5. Ultrasonic devices
- 6. Mothballs
- 7. Rubbing alcohol
- 8. Dryer sheets
- 9. Talcum powder
- 10. Foggers

WHAT DID THE PROPERTY MANAGER DO WRONG?

Review case study and answer a question: What is the most important thing that the property manager did wrong?



Things that the property manager did wrong



The MOST important thing that the property manager did wrong







CASE STUDY: FRAN STUART

Fran Stuart is the property manager at a high-rise community with 150 units for elderly and disabled residents. Fran has been having an increased problem with bed bugs in her community which has gotten worse each year over the past two years. Fran is aware of 10 apartments with bed bugs that have been reported by residents.

She has created an educational program for the entire apt. community and treats units with bed bugs immediately once they have been reported to her. Her pest management company is using a combination of chemical and nonchemical methods in the bedrooms and living rooms of units with reported bed bugs. Fran has provided assistance to the residents by helping them prepare for visits by the pest company and by providing mattress and box spring encasements. In addition to treating the apartment where bed bugs are reported, Fran has her pest control company do a visual inspection for bed bugs in apartments that share a common wall, floor or ceiling, with the infested apartment.

Fran also established an "after treatment" protocol consisting of 2-3 follow up visits for all apartments treated for bed bugs. If bed bugs are not found through visual inspection during any of the follow up visits, the problem is considered resolved.

What is the most important thing that Fran did wrong?

WHAT IS THE MOST IMPORTANT THING FRAN IS DOING WRONG?

Fran is relying on residents as the sole method for detecting bed bug infestations.







PROBLEM #2

MOST COMMUNITIES RELY ON RESIDENTS TO REPORT INFESTATIONS





DO YOU WANT THESE ODDS?

Number of infestations reported by residents





3 reported infestations

Number of additional infestations not reported by residents



For every 1 infestation reported, there are at least 2 – 3 that are NOT reported.



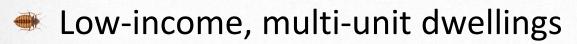
WHY ARE SO MANY INFESTATIONS UNREPORTED? What do you think?

- 1. Unwilling to report the problem
 - Apathy (nothing ever changes)
 - Fear negative repercussions
 - Trying to avoid attention from management
 - unauthorized occupants, illegal activities
 - Ashamed or embarrassed
- 2. Unaware of bed bugs
 - Don't see bugs
 - Not reacting to bites (especially the elderly)
 - Mental disability





HIGHEST INFESTATION RATES FOUND IN:



Elderly communities

Mentally/physically challenged residents











AN EARLY DETECTION ANALOGY

Survival rates at different stages of breast cancer:

Stage	5 yr relative survival rate
0 or I	~ 100%
П	~ 93%
Ш	~ 72%
IV	~ 22%

Costs to treat different stages of breast cancer:

Stage	Cost
0	~ \$60,600
1/11	~ \$82,000
Ш	~ \$129,300
IV	~ \$134,600

Journal American Health and Drug Benefits 2016





SO YOU CAN IMAGINE THAT . . .

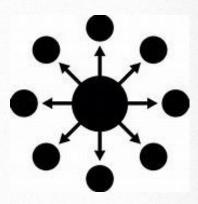
The longer an infestation goes without being addressed, the more likely it



... becomes a complex problem to eliminate



. . . becomes costly to eliminate



... will spread





REMEMBER THE PROBLEM AND THE SOLUTION

PROBLEM #2

MOST COMMUNITIES
RELY ON RESIDENTS TO
REPORT INFESTATIONS

SOLUTION #2

- 1. UNDERSTAND IMPORTANCE
 OF EARLY DETECTION
 AND
- 2. Don't rely on Residents to Report Infestations







QUIZ #2

- 1. From the list, select two reasons why residents do not report infestations.
- 2. From the list, select two types of communities that are at risk for high infestation rates.
- 3. From the list, identify two reasons why it is so important to have an early detection program.







Reasons why residents do not report infestations:

- 1. Trying to avoid attention from management
- 2. Unauthorized occupants
- 3. Illegal activities taking place in unit
- 4. Fear negative repercussions
- 5. Ashamed or embarrassed
- 6. Don't see bugs
- 7. Not reacting to bites (especially the elderly)
- 8. Mentally handicapped







Types of communities that are at risk for high infestation rates:

- 1. Low-income, multi-unit dwellings
- 2. Elderly communities
- 3. Among mentally/physically challenged residents



Reasons why it is so important to have an early detection program:

An infestation will:

- 1.Become a more difficult problem to eliminate.
- 2.Become more expensive to eliminate.
- 3. Spread even more.



BREAK





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PROBLEM #3

RELYING ON INEFFECTIVE METHODS FOR EARLY DETECTION





METHODS FOR DETECTING BED BUG ACTIVITY

Four other methods for <u>detection</u>.

Resident interview

Visual inspections

Bed bug sniffing dogs

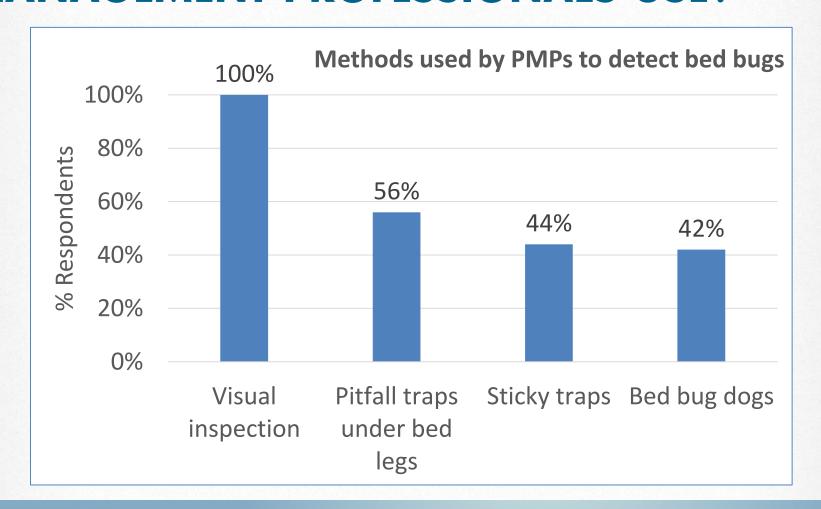
Interceptor traps







BUT – WHAT DO MOST PESTMANAGEMENT PROFESSIONALS USE?









WHAT METHODS DO YOU OR YOUR PEST CONTROL COMPANY USE?

POLL

You can choose more than one answer.





OF ALL METHODS, INTERCEPTORS ARE THE MOST EFFECTIVE FOR EARLY DETECTION





BlackOut Bed Bug Interceptor



Volcano (with lure)





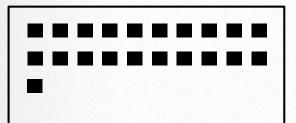
AND WE CAN PROVE IT.

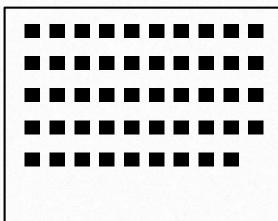
71 apartments (mix of low-level to severe infestations)

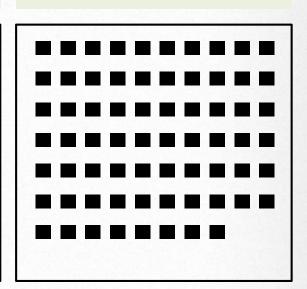
Resident interviews found 21 infested units

Visual Inspections found 49 infested units

Interceptor traps found 68 infested units







30% success rate

69% success rate

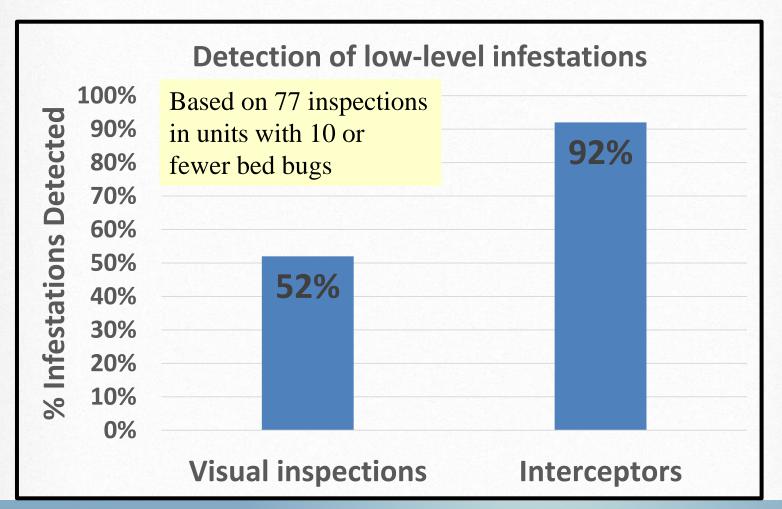
96% success rate







AND FOR JUST LOW LEVEL INFESTATIONS:









COMPARISON OF SCENT DOGS VS. INTERCEPTORS

276 apartments inspected (67 with bed bug activity)



Mean detection rate: 44%

• Range: 10% - 80%

Mean false positive rate: 14%

• Range: 0 – 57%

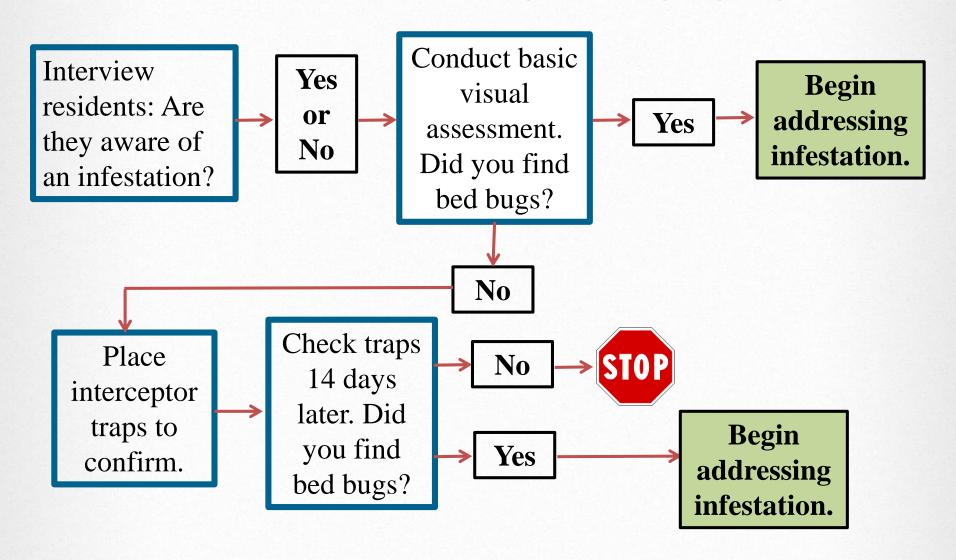


Detection rate for interceptor traps placed out for 14 days: 90%





AN EFFECTIVE INSPECTION PROTOCOL







REMEMBER THE PROBLEM AND THE SOLUTION

PROBLEM #3

RELYING ON INEFFECTIVE METHODS
FOR EARLY DETECTION

SOLUTION #3

USE EFFECTIVE DETECTION
METHODS







QUIZ #3

From the list, select the most effective method for detecting bed bug activity.







QUIZ ANSWERS

The most effective method for detecting bed bug activity:

Interceptor traps



So far, you may think that **this** is the equation for success:

Early detection + interceptor traps and visual assessment = success

Not so fast.





PROBLEM #4

NOT ALL PROPERTIES ARE THE SAME: How Do You Know Which Early DETECTION PROGRAM IS BEST FOR YOUR COMMUNITY?



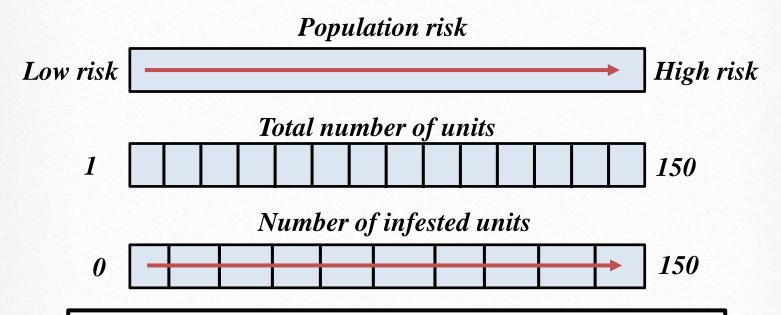




LET'S VISIT FRAN AGAIN

Fran Stuart is the property manager at a high-rise community with 150 units for elderly and disabled residents. Fran is aware of 10 units with bed bugs that have been reported by residents.

Think about the range of possibilities for three factors:



Start and end numbers for the total number of units and the number of infested units are just for this example.





ANSWER THESE QUESTIONS IN THE CHAT BOX

Question #1: Is Fran's population high risk or low risk?

Question #2: What was the known infestation rate in Fran's building?



CHARACTERIZING FRAN'S SITUATION:

Fran Stuart is the property manager at a high-rise community with 150 units for elderly and disabled residents. Fran has received 10 reports of bed bugs from residents over the past year.

Population risk High risk Low risk Total number of units Number of known infested units *150*

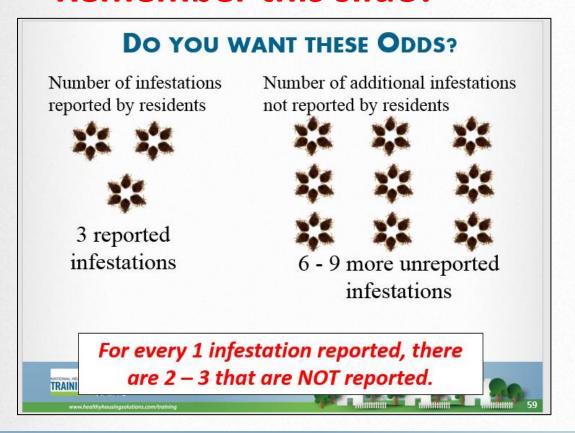
Fran has a high risk population and an infestation rate of about 7%.





SHOULD FRAN DO A BUILDING-WIDE ASSESSMENT?

Remember this slide?



Fran has 10 reported infestations but how many infestations does she really have?

Answer: 30-40 infestations

(10 that she knows of + 20-30 more that she is unaware of)





YES. YES, SHE SHOULD.

- High risk population
- Could be up to 30 or more infestations
- Actual infestation rate of about 27%

Fran should invest the money in visual assessments and interceptor traps to do a building-wide assessment.

If the **known infestation** rate is $\geq 5\%$ it is probably best to do a building wide assessment





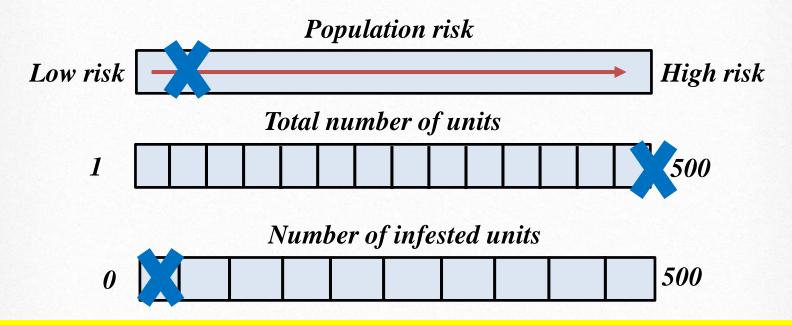
BUT WHAT IF THE SCENARIO IS DIFFERENT?

- Garden style apartment complex with primarily families as residents
- 500 units
- 3 known infestations (possibly 6 9 actual infestations)

Should there be a building-wide assessment? Why or why not?



500 UNIT GARDEN STYLE COMPLEX



Low risk population and an infestation rate less than 2%.

A building-wide assessment would NOT be fiscally responsible. The cost of the assessment will outweigh the value. This complex should focus on resident education.





REMEMBER THIS SLIDE? WHAT IS CRITICAL FOR RESIDENT EDUCATION?

- 1. No reason to be ashamed or embarrassed.
- 2. No negative consequences from management.
- 3. Know the signs of bed bug activity.
- 4. Suspected activity should be reported immediately.
- 5. Reporting is KEY to preventing the spread of bed bugs.



REMEMBER THE PROBLEM AND THE SOLUTION

PROBLEM #4

NOT ALL PROPERTIES ARE THE SAME:

How Do You Know Which Early
DETECTION PROGRAM IS BEST FOR YOUR
COMMUNITY?

SOLUTION #4

DOING A BUILDING WIDE ASSESSMENT

(WHEN THE CIRCUMSTANCES CALL FOR IT)







QUIZ #4

Midwest Oak Apartments is a mid-rise complex with six buildings, each with six floors, and a total of 216 units. The complex is for seniors. Residents have reported 10 infestations of bed bugs.

- Calculate the **probable** infestation rate.
- Decide whether this complex needs a building-wide assessment.







QUIZ ANSWERS

Midwest Oak Apartments has a probable infestation rate of:

14 - 19%

Midwest Apartments should do a building-wide assessment:

True



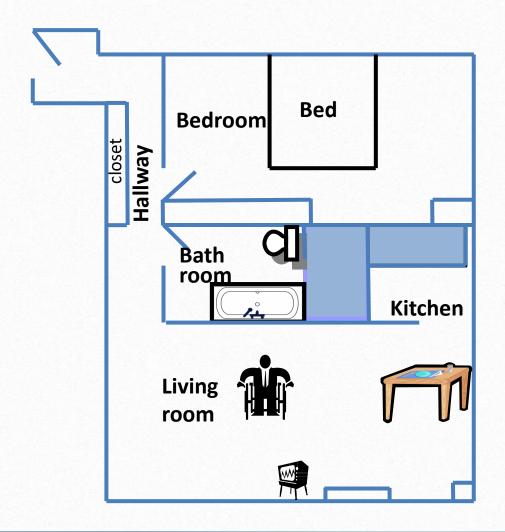
PROBLEM #5

FOCUSING ON JUST THE BEDROOM & LIVING ROOM AND ONLY UNITS WITH BED BUGS





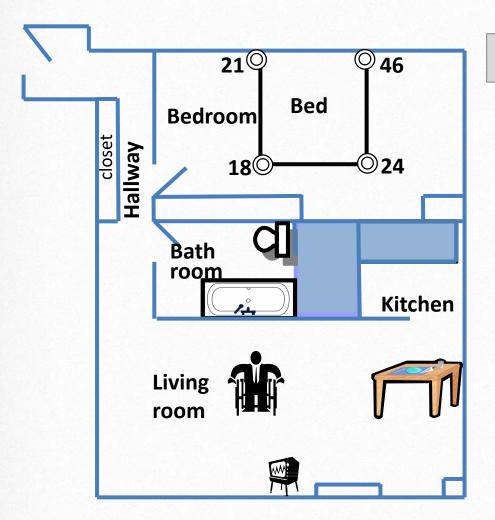
WHERE DO YOU EXPECT TO FIND THE MOST BUGS?







THE BED



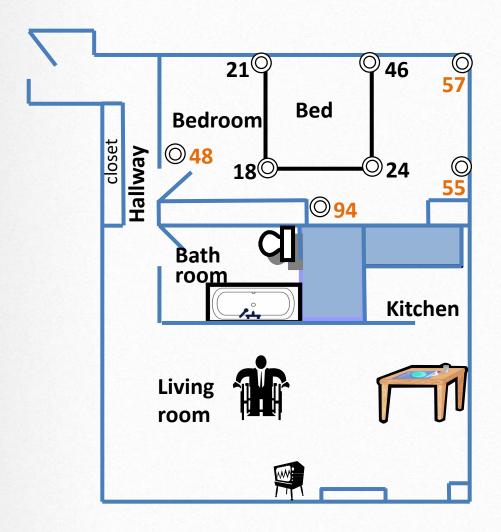
Bed = **109 bugs**







THE BEDROOM

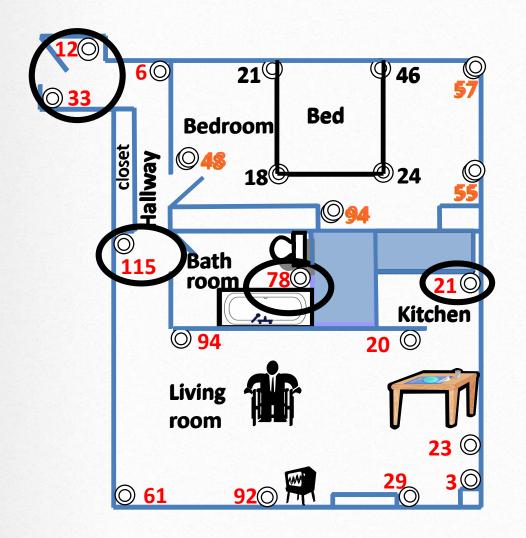


Bed = 109 bugs Bedroom = 254 bugs





WHERE ELSE DO YOU THINK THEY ARE?



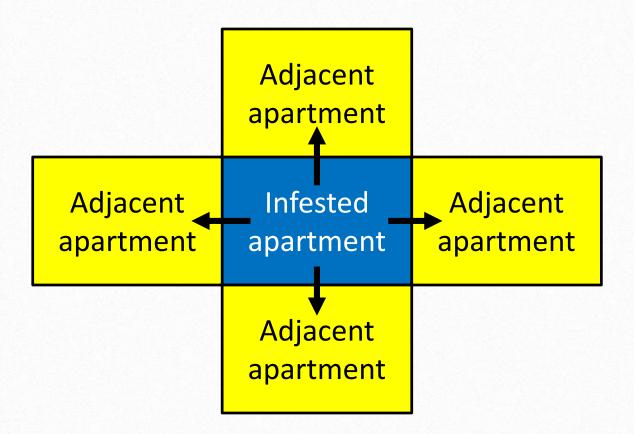
Bed = 109 bugs Bedroom = 254 bugs Rest of apt. = 587 bugs

88% captured away from bed





FORWARD MY MAIL PLEASE . . .



INCLUDING ACROSS THE HALL!





REMEMBER THE PROBLEM AND THE SOLUTION

PROBLEM #5

FOCUSING ON JUST THE
BEDROOM & LIVING ROOM
AND ONLY UNITS WITH
BED BUGS

SOLUTION #5

TREAT THE ENTIRE APARTMENT
AND
INSPECT NEIGHBORING UNITS







PROBLEM #6

LET'S TAKE TWO POLLS BEFORE WE INTRODUCE PROBLEM #6





HOW IMPORTANT IS IT FOR A RESIDENT TO PREPARE THEIR APARTMENT PRIOR TO A BED BUG TREATMENT?

POLL





ARE ALL YOUR RESIDENTS WITH BED BUGS REQUIRED TO DO THE SAME PREP PRIOR TO TREATMENT?

POLL





PROBLEM #6

PREPARATION REQUIREMENTS ARE OFTEN EXCESSIVE AND OVER-BURDENSOME





Quote associated with preparation lists

"Be ready for some very serious, exhausting, detailed, hard work! Get a friend or friends to help you, if possible, because the amount of preparation can sometimes be mind-boggling. Do it right the first time; do the necessary hard work. You can't skimp when it comes to preparing for bed bug treatment."

Source: Pest management company website





Typical client prep list

HOW TO PREPARE FOR A BED BUG TREATMENT

Complete these steps on the extermination day, all at once, all in one day

- Collect all fabric items and place in plastic bags, Collect and remove ALL washable fabric items (pillows, sheets, blankets, clothing, rugs, curtains, towels) from ALL rooms (closets, bedrooms, living rooms, bathrooms, and kitchen). Place into trash bags and seal.
- 2. **REMOVE** all of the bags from your home.
- 3. WASH & DRY on HOT, then seal them in bags. Wash ALL items in HOT water in washing machine. Seal and throw away the empty trash bags. Dry ALL items on the highest heat setting in a dryer. Place the clean items in NEW, UNUSED PLASTIC BAGS AND TIE CLOSED. DO NOT BRING CLEAN BAGS OF CLEAN LAUNDRY INTO THE HOME UNTIL AFTER THE EXTERMINATION.
- REMOVE ALL CLUTTER, BOXES, BAGS, ETC. VACUUM ALL SURFACES WITH A STRONG SUCTION VACUUM (All furniture, mattresses, floors, walls, crevices, heating units, baseboards, picture frames etc.





Other common preps



Empty contents from dressers and closets, launder clothing and bag personal items.



Remove and launder draperies.



Strip bed linens, remove mattress and box spring and stand on end



Remove pictures, mirrors, clocks, light fixtures, outlet covers, and hanging items from walls.



Loosen the carpet from tack strip at floor/wall junction and/or baseboard around perimeter of rooms.

Are we asking too much from residents?

Are the typical preparation requirements <u>realistic</u> and are they <u>justified</u>?





Why are we asking them to do this in the first place?

The concern that a bed bug could <u>be</u> anywhere which might lead to control failure





Take the Mirror Test

Look in the mirror and ask yourself:



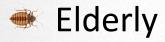
"Could I do what we are asking our residents to do?"







REMEMBER WHICH RESIDENTS SUFFER THE HIGHEST INFESTATION RATES



Mentally/physically diasabled











Insufficient prep = no service

"We understand that appropriate preparation can be difficult to achieve in a short period of time and that senior citizens or handicapped individuals may need additional assistance and time considerations.

Please note: we will not provide treatment to any unit or property that has not met the preparations..."

Source: Pest management company website

This is not ok, nor does it help!







Comprehensive prep can be disruptive

Disrupts the infestation and conditions are altered

Bed bugs can spread by moving items

Items not properly addressed (bagged items still with bed bugs)





Do We Really Want Residents Stripping and Moving These Beds?







Pictures courtesy of Bed Bug Central







How Does This Help?





Bags that are ripped/torn or opened





Every infestation is different, every apartment is different

Preparations should not be "one size fits all"

Is this a low level infestation that was recently introduced? Is this a severe infestation that **Questions to ask:** has existed for a long time without being reported? Is the unit cluttered or uncluttered?

Concept of Limited Prep

Allows us to:

- 1. Evaluate the true nature of the infestation.
- 2. Make "site specific recommendations" based on:
 - Areas infested and,
 - Obstacles to successful control.



EXTENSIVE VS. LIMITED RESIDENT PREP

Task for Resident	Extensive	Limited
Strip beds of bedding	Yes	No
Stand mattress & box spring on end	Yes	No
Empty closets, dressers, wardrobes, bag everything	Yes	No, only specific areas if bugs observed on initial visit
Launder all clothes and keep other items bagged for > 6 months	Yes	No, only launder specific items if bugs observed on initial visit & address other types of items
Remove items beneath beds, bag for > 6 months	Yes	Not initially, items need to be addressed

THE REALITY IS THAT . . .

Studies have shown that, in most cases, resident preparation is NOT required for effective bed bug treatment.





REMEMBER THE PROBLEM AND THE SOLUTION

PROBLEM #6

PREPARATION REQUIREMENTS

ARE OFTEN EXCESSIVE

AND OVER-BURDENSOME

SOLUTION #6

FITS ALL" PREPARATIONS

INSTEAD

BASE REQUESTS FOR

COOPERATION ON SITE SPECIFIC

NEEDS







QUIZ #5

- 1. From the list, select two preparation tasks that are NOT necessary under limited resident prep if no bed bugs observed on initial visit.
- 2. From the list, select two possible complications that comprehensive resident preparation can cause.





QUIZ ANSWERS

Preparation tasks that are NOT necessary under limited resident prep if no bed bugs observed on initial visit.

- 1. Remove items beneath beds and bag for at least 6 months.
- 2. Empty closets, dressers, wardrobes, bag and launder everything.
- 3. Launder all clothes and personal items.



QUIZ ANSWERS

Possible complications that comprehensive resident preparation can cause.

- 1. Disrupts the infestation and conditions are altered.
- 2. Bed bugs can be spread by moving items.
- 3. Items are not properly addressed (e.g. bagged items still with bed bugs).



BREAK





PROBLEM #7

AFFORDABLE HOUSING COMMUNITIES OFTEN HAVE LOW QUALITY PEST CONTROL





THE COUEST BID

POES NOT MEAN

THE BIGGEST SAVINGS

43641940

REQUEST FOR PROPOSAL

The trick is to outline **EVERYTHING**

LVLIIIIIII

in great detail!







CONTRACT SHOULD DRIVE QUALITY PEST CONTROL

Inspection / detection methods (including building-wide inspection pricing)

Request for prep based on nature of the infestation

Combination of chemical and non-chemical treatments

Proper follow-up and elimination protocol

Surround unit protocol

Define guarantees and warranties







NO SILVER BULLET: DON'T HAVE THIS CONVERSATION WITH YOUR PEST CONTROL COMPANY

Them:

There's no need for a complicated approach to killing bed bugs. All I need to do is use a pesticide to get rid of

You:

I thought relying solely on pesticides was a bad idea because they're resistant to them.

Them:

That's not true. Pesticides are all I need to solve your bed bug problems

You:

Okay, great. That should make things simpler, and a lot less expensive!







FINDING A GOOD COMPANY

- 1. Get recommendations from peers.
- 2. Call at least 3 companies.
- 3. Confirm required licenses, certificates, and insurance.
- 4. Ask specifically about bed bug experience.
- 5. Ask about their IPM approach.

And the most important thing of all?

Make sure the contractor focuses on early detection, uses effective methods and has an elimination protocol.

EFFECTIVE TOOLS AND METHODS

Multiple Inspection Methods Inexpensive bed frames

Storage bins for items that have been de-infested

Mattress encasements

Vacuums and Steamers

Bag and discard items not interested keeping

Pesticides that actually work

Interceptor traps

Heat chamber for infested personal items

Assisting residents when needed







Interceptor traps





Detection, evaluation of treatments, confirmation of elimination







Vacuum





Picture courtesy of BedBug Central

Physically remove large numbers of bugs, eggs, and caste skins Limitation will not remove bugs in cracks







Steam



Kills all life stages including eggs
Penetrates cracks and crevices and pleats & folds on fabric surfaces





Mattress encasements



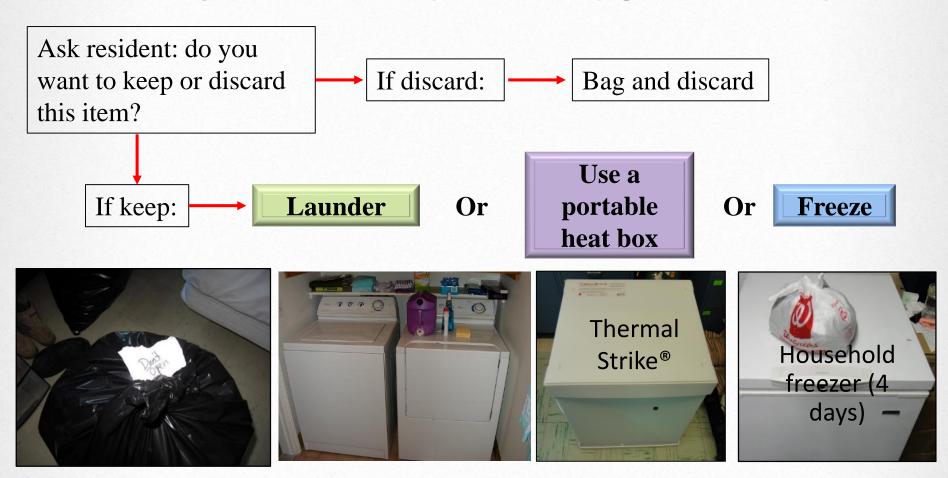
Salvage infested beds, protect replacement beds, increase efficiency of follow up inspections and ease of treatment







DEALING WITH INFESTED PERSONAL ITEMS



This will require involvement from the Housing Authority staff





Pesticides that work

YOUR PEST CONTROL COMPANY SHOULD:

- Treat cracks and crevices with desiccant dust
- Use liquid residuals that have different modes of action or formulation
- Use at least one combination of a neonicotinoid and a pyrethroid





Prevent movement between units

In a multi-family structure:

- Isolate units by installing door sweeps.
- Seal cracks and crevices around baseboards, light sockets, etc.

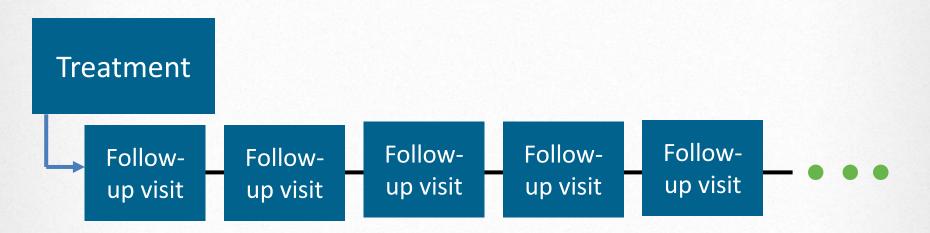






Follow-up Protocol

Continue follow-up visits until the infestation is eliminated.







Elimination Protocol

Use 1. visual inspections

2. traps, and 3. resident feedback to determine elimination





Confirm elimination

3 consecutive visits at 2 week intervals (No bugs, No bites)





REMEMBER THE PROBLEM AND THE SOLUTION

PROBLEM #7

AFFORDABLE HOUSING
COMMUNITIES OFTEN RECEIVE
LOW QUALITY PEST CONTROL

SOLUTION #7

HAVE A WELL WRITTEN CONTRACT
THAT DRIVES EFFECTIVE BED BUG
MANAGEMENT AND CHOOSE A
QUALITY PEST CONTROL COMPANY







QUIZ #6

- 1. From the list, identify three components of a good contract that drives quality pest control.
- 2. From the list, identify four effective treatment methods.







QUIZ ANSWERS

Components of a good pest contract that drives quality pest control

- 1. Inspection/detection methods are clearly detailed and building-wide inspection pricing is included.
- 2. The company uses a combination of chemical and nonchemical treatments.
- 3. The company has a good follow up and elimination protocol.
- 4. Resident prep is based on the nature of the infestation.





QUIZ ANSWERS

Effective treatment methods:

- 1.Inspection
- 2. Vacuum
- 3. Steam
- 4. Launder
- 5. Heat
- 6. Freeze
- 7. Bag and discard
- 8. Prevent movement between units
- 9. Mattress encasements
- 10. Interceptor traps
- 11. Pesticides that actually work
- 12. Portable heat box
- 13. Storage bins
- 14. Inexpensive bed frames

PROBLEM #8

YOUR PEST MANAGEMENT COMPANY DOESN'T DO WHAT THEY SAID THEY WOULD DO







SOLUTION #8

IMPLEMENT A QUALITY ASSURANCE EFFORT TO MAKE SURE YOUR COMPANY FOLLOWS THE CONTRACT.







STAY IN TOUCH

Schedule regular status updates with pest control company regarding units being monitored.

Verify that the work is being completed as contracted.

Keep in mind that managers should NOT delegate all responsibility to the PMP.







REMEMBER THE PROBLEM AND THE SOLUTION

PROBLEM #8

YOUR PEST MANAGEMENT COMPANY
DOESN'T DO WHAT THEY SAID THEY
WOULD DO

SOLUTION #8

IMPLEMENT A QUALITY
ASSURANCE EFFORT TO
MAKE SURE YOUR
COMPANY FOLLOWS THE
CONTRACT.







Problems and Solutions Summary

Problem

#1 Lack of information and misinformation

#2 Most communities rely on residents to report infestations

#3 Relying on ineffective methods for early detection

#4 Not all Properties are the same: How do you know which early detection program is best for your community?

Solution

#1 Educate yourself, your staff and your residents

#2 Recognize the importance of early detection & don't rely on residents to report infestations

#3 Use effective detection methods

#4 Doing a building-wide assessment when circumstances call for it







Problems and Solutions Summary

Problem

#5 Focusing on just the BR, LR and only units with bed bugs

#6 Preparation requirements are often excessive and over-burdensome

#7Affordable housing communities often receive low-quality pest control

#8 Your pest management company doesn't do what they said they would do

Solution

#5 Treat the entire apartment and inspect neighboring units

#6 Eliminate excessive "One Size Fits All" preparations. Instead, base requests for cooperation on site-specific needs

#7 Have a well written contract that drives effective bed bug management and choose a quality company

#8 Implement a quality assurance effort to make sure your company follows the contract





WRAP UP

- In the chat box, list at least two next steps that you plan now that this course is completed.
- Any final questions?

