

Improving Housing Quality with Integrated Pest Management (IPM)

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United States
Department of
Agriculture

National Institute
of Food and
Agriculture



StopPests provides free training and technical assistance

Reduce pest infestations—Allocate pest control time & resources to solve pest problems with IPM

Prevent infestations—start pest-free and sealed up; educate staff, clients, and residents

Maintain— continuous monitoring and inspections



See: StopPests.org

[IPM: A Guide for Affordable Housing](http://www.stoppests.org/Guide)
at www.stoppests.org/Guide

What do pests do to us?

- **Pests cause allergies & can trigger asthma**
 - Mice - 83% of *all* homes!
 - 95% low-income
 - 89% of schools!
 - Cockroaches - up to 63%
- **Asthma: rate has doubled in 20 years**
 - Up to 30% or more of children under 18
 - Main cause of lost school days... and work days!
 - African American children are hospitalized and die 2x as white children; Latinos - 3x!
 - American Indian/Alaska Native children are 60% more likely to have asthma as white children.
- **Bites can transmit Lyme, West Nile, Zika, rabies**
 - Thousands of rat bites each year in US!
- **Carry disease pathogens and contaminate food**
 - Rodents carry Hanta Virus, Leptospirosis, Plague, Rat-bite Fever, Salmonella, Typhus



What is IPM?

- **Integrated:** Uses multiple approaches that work together
- **Pest:** What the multiple approaches work to fight
- **Management:** Use of the most economical means with the least possible risk to people, property, and the environment

Routine spraying of pesticides is not an effective or safe option

*"IPM effectively eliminates pests in **safer** and long term **cost-effective** ways than traditional pesticide treatments."* HUD

Children and **seniors** are more susceptible to pesticides and deserve special protection.



Pesticide risk by application method

Less risk of exposure



More risk of exposure

Tamper-resistant station

Gel bait in a crevice

Total release fogger

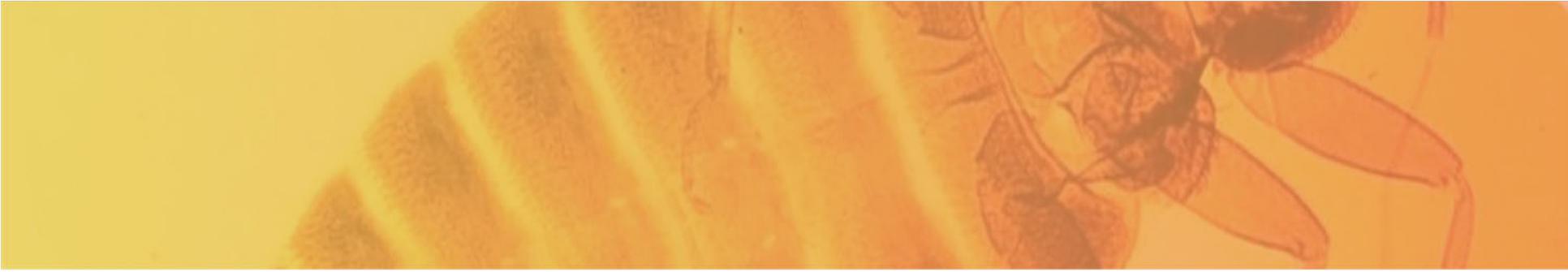
Pest Problem Solving

1. Inspect and monitor
2. Identify
3. Take control measures
4. Evaluate effectiveness



Sticky traps used to monitor for cockroaches and interceptors used to monitor for bed bugs are an essential part of an IPM program and make inspection easier





Challenges to Implementing IPM in Affordable Housing

The blame game

Management did nothing!

I called our guy and he sprayed.

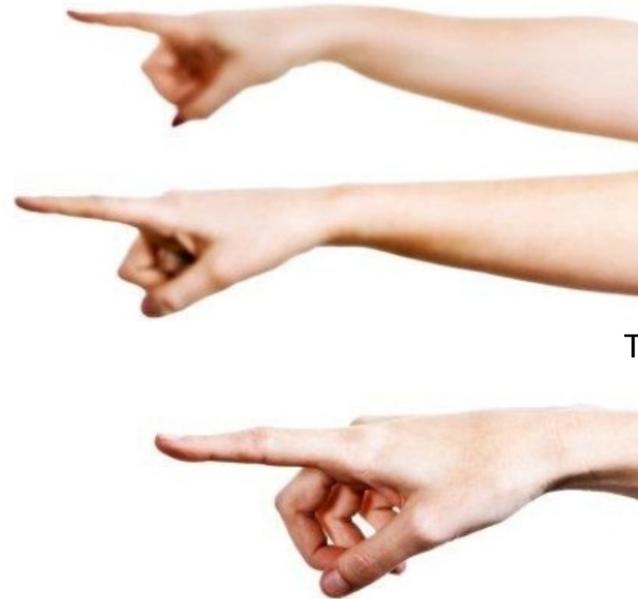
I can't treat this apartment, the resident is unprepared.



The exterminator did nothing!

I used 6 bug bombs and I'm still getting bites!

The tenant keeps bringing them back in the building!



Poorly written contracts

Apartment Treatments: The technician uses three different chemicals in the unit. They are as follows:

Delta Dust: EPA #432772; .05%-The wall outlets are removed by the technician and he puffs this fine dust in the wall. It spreads throughout the entire wall void reaching cracks and crevices.

Residual Liquid: Suspend SC EPA #432763; .06%— This is sprayed on carpet and baseboards. It leaves a residual to help keep killing between treatments. Also used on the bed rails and frames.

Pyrocide 100: EPA #10211424; 1.0%- This is a fumigant that is used throughout the entire unit. It is sprayed on furniture, inside drawers, closets, corners, etc. Once the unit is sprayed no one is allowed in the unit for four hours. After four hours the fumigate has dissipated and the tenant may return to their unit.

Monitoring: Each apartment in the facility has been given a monitoring device that is placed between the mattress and box springs. Our pest control technician also sprays for roaches each month and during the roach spraying these monitors are visually checked for bed bug activity.

No contract oversight

Unit 808-

July 27, 2015 – next scheduled treatment

Initial Treatment February 23, 2015
Retreats: March 9, 2015
March 24, 2015
April 10, 2015
April 24, 2015
May 8, 2015
May 21, 2015
June 5, 2015
June 29, 2015
July 13, 2015
July 27, 2015 – next scheduled treatment

\$500 +
\$500 +
\$500 +
\$500 =

\$2000

11 treatments?!

Who is paying attention?

Low-bid/one-size fits all contracts

AK Commercial

PRODUCT	EPA#	RATE	EQUIP.	AMOUNT	LOCATION
Advion Ant Gel Bait	100-1498	0.05%	B	Gr	
Altosid Pro G	2724-451	1.5%	H	Tsp	
Arion	100-1501	0.05%		Oz	
Bifen L/P Granules	53883-124	0.2%	H	Lbs	
CB 80	279-3393	4.5%	A	Oz	
CB D-Force HPX	9444-217	0.06%	A	Oz	
Cimexa Dust	73079-12	100%	D	Oz	
Cirrus	1021-1812	12.67%	PAS	Oz	
Delta Dust	432-772	0.05%	D	Gr	
Demand CS	100-1066	0.003%		Oz	
EcoPCO ARX	67425-15-655	1.4%	A	Oz	
Essentria IC ²	25b exempt	0.27%		Oz	
Exciter	655-798	0.025%		Oz	
First Strike Soft Bait	7173-258	0.0025%	S	Ea	
Fuse	53883-328	0.067%		Oz	
Generation Blue Max	7173-288	0.0025%	S	Ea	
Genrol IGR	2724-351	9.0%		Oz	
Invt AB Paste	73079-11	0.05%	B	Gr	1, 2, 12
Invt Granular Bait	73079-14	0.5%	H	Oz	
Maki Mini Blocks	7173-202	0.005%	S	Ea	
Maxforce FC Ant Gel	432-1264	0.003%	B	Gr	
Maxforce FC Roach Gel	432-1259	0.01%	B	Gr	
Maxforce Fly Spot Bait	432-1455	0.127%	C	Oz	
Maxforce Impact Gel	432-1531	1.0%	B	Gr	
Niban FG	64405-2	5.0%	H	Oz	
NyGuard IGR	1021-1603	0.003%		Oz	
NyGuard Plus	1021-2580	2.1%	A	Oz	
Onslaught Fastcap	1021-2574	0.062%		Oz	1, 2, 12
Phantom Liquid	241-392	0.5%		Oz	
Sterifab	499-473	0.05%	C	Oz	
Suspend Polyzone	432-1514	0.03%		Oz	
Temprid SC	432-1483	0.075%		Oz	
Vendetta Plus Gel	1021-2593	0.55%	B	Oz	

COMMENTS: SEE "POST APPLICATION PRECAUTIONARY STATEMENTS" ON BACK OF TICKET.
 Serviced 56 units for roach/bug/roach
 Serviced 5 on Demands
 Final Block
 20
 21 Ea 1, 2, 12
 21 Ea 1, 2, 12

FIND PRODUCT INFORMATION AT: <http://npic.orst.edu/NPRO>.
 CUSTOMER IS AWARE OF PLACEMENT OF INDOOR RODENT BAIT STATIONS. CUSTOMER HAS INSPECTED WORK AREA AND FOUND IT FREE OF DAMAGES OR DEFECTS RESULTING FROM HOME PARAMOUNT SERVICES.

Customer Signature: *[Signature]* Date: 12/11/17
 Technician (Print): *Danny Thomas* Vehicle # 12009 Reg./Cont.# 21
 Technician (Print): *Jordan Moran* Vehicle # Reg./Cont.#
 Time: In 9:00 Out: 2:30 DEC 12 2017
 Top Copy - Brass Bottom Copy - Customer
 BY: *[Signature]*

LOCATION CODES

1 = Kitchen
 2 = Bathroom
 3 = Living Room
 4 = Bed Rooms
 5 = Dining Room
 6 = Basement
 7 = Crawlspace
 8 = Attic
 9 = Garage
 10 = Office
 11 = Storage
 12 = Interior
 13 = Exterior

A = Cabinets
 B = Windows
 C = Doors
 D = Wall Voids
 E = Appliances
 F = Kitchen equip.
 G = Baseboards
 H = Counters
 I = Closets
 J = Furniture
 K = Sill plates
 L = Expansion crack

M = Soffits
 N = Soil
 O = Vegetation
 P = Mulch
 Q = Under siding
 R = Floor drains
 S = Foundation
 T = Crack & Crevice

Describe additional locations in comment section.

TARGET PEST:

Ants
 Bed Bugs
 Bees/Wasps
 Carpenter Ants
 Cockroaches
 Crickets
 Fleas
 Mice/Rats
 Millip/Centipedes
 Mosquito
 Silverfish
 Small Flies/Flies
 Spiders
 See Comments

EQUIPMENT CODES

A = Aerosol
 B = Bait Applicator
 C = Comp. Air Sprayer / Sprayer
 D = Dust Bulb
 F = Foam Equip.
 H = Spreader
 MB = Mist Blower
 P = Power Spray
 PAS = Portable Aerosol System
 S = Bait Station
 ST = Steam
 TR = Trap
 V = Vacuum
 W = Web Duster

Band Treatment Width (ft):
 Band Treatment Length (ft):
 Broadcast Treatment Area (square ft):
 Space Treatment Volume (cubic ft):

EXTERIOR BAND APPLICATION

PRODUCT	EPA#	EQUIP.	AMOUNT
Arion 0.05%	352-776		Gal
Application Rate - 2 gallons / 1000 sqft			
Bifen L/P G 0.2%	53883-124	H	Lbs
Application Rate - 2.3lbs / 1000 sqft			
Demand CS	100-1066		Gal
Application Rate - see reverse side			
EcoExempt G 3.5%	25b exempt	H	Lbs
Application Rate - 3lbs / 1000 sqft			
Fuse	53883-328		Gal
Application Rate - see reverse side			
Suspend Polyzone	432-1514		Gal
Application Rate - see reverse side			
Temprid SC	432-1483		Gal
Application Rate - see reverse side			

P = Power Spray (H) Backpack Sprayer C - Concentrated Air sprayer

EQUIPMENT INFORMATION

SERVICED

Pest Monitors
 Interior Rodent Stations
 Exterior Rodent Stations
 Insect Light Traps

WEATHER CONDITIONS:

General Weather Conditions: Clear Partly Cloudy
 Cloudy Fog Rain Drizzle
 Wind Speed: 2 mph Wind Direction: NW Temp: 40 °F
 Rel. Humidity (circle one): 0 M H
 C159 10-2016 © 2016 Home Paramount Pest Control Company

These technicians visited 61 units from 9am to 2:30pm. 330 minutes 61 = 5.4 minutes (3 minutes per unit?)



Monitoring is
lacking &
REAC
discourages
use



Over-reliance on sprays



Clutter and sanitation

Self-treatments



Mice.....



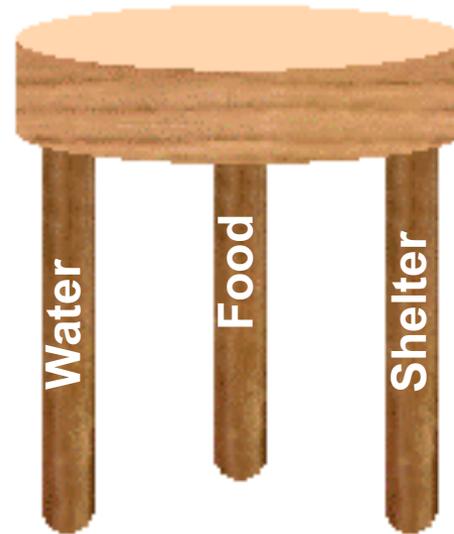
Mice and asthma

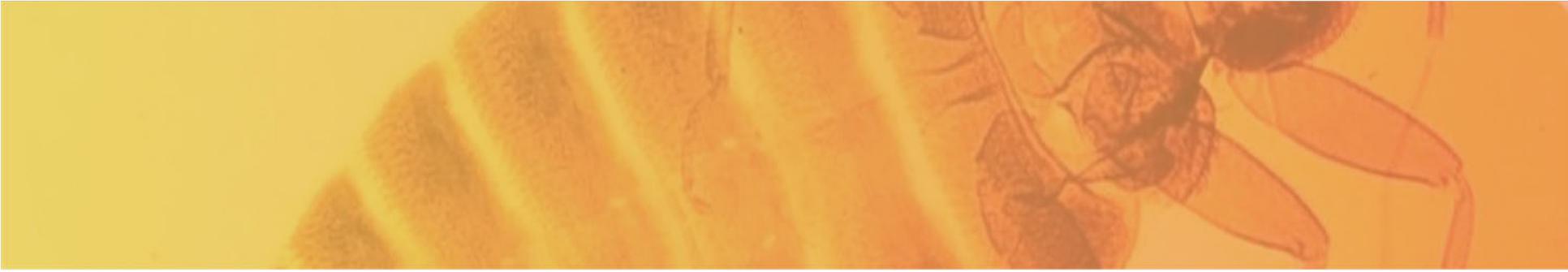


IPM for bed bugs is tricky...

- ~~• Food~~
- ~~• Water~~
- ~~• Shelter~~

Can we eliminate
these for bed bugs?





Solutions

Designated IPM Coordinator

Works with Staff:

- Meet meet meet -with staff, residents and pest control company/technicians
- Reviews work order system and flags focus units for follow-up

Works with Contractor:

- Reviews contract - knows what's in it
- Outlines best practices for pest control in next RFP
- Keeps records and periodically reviews service tickets and records
 - Directs pest control time and resources to heaviest infestations first
 - Evaluates success or failure to eliminate pests. **Holds contractor accountable.**

Detailed scope of service



MODEL RFP FOR COMPLEX-WIDE MANAGEMENT OF BED BUGS IN MULTIFAMILY HOUSING COMMUNITIES

This model RFP is based upon results of Academic research regarding tools and methods proven to be effective in the detection and treatment of bed bugs. The specifications for detection and treatment should be updated as new tools and techniques become available and have been proven effective through scientific methods.

The goal of this RFP is not to just outline effective methods to eliminate bed bugs but is also designed to limit the impact that bed bugs have at the community-level within housing complexes. The extent of proactive inspections will vary based upon the infestation rate within a housing community as well as the infestation rate associated with individual buildings within a housing community. At the adoption of this RFP, all buildings within the housing community will receive a proactive inspection to establish the level of bed bug activity that has not been reported. The extent of the proactive inspection will depend upon the known history of bed bug activity with each building. Buildings with a known history of less than 5% bed bug infestation rate over the previous 12 months can receive a brief visual inspection of all units that can be conducted by any trained personnel. Monitoring in buildings with a known infestation

Recordkeeping

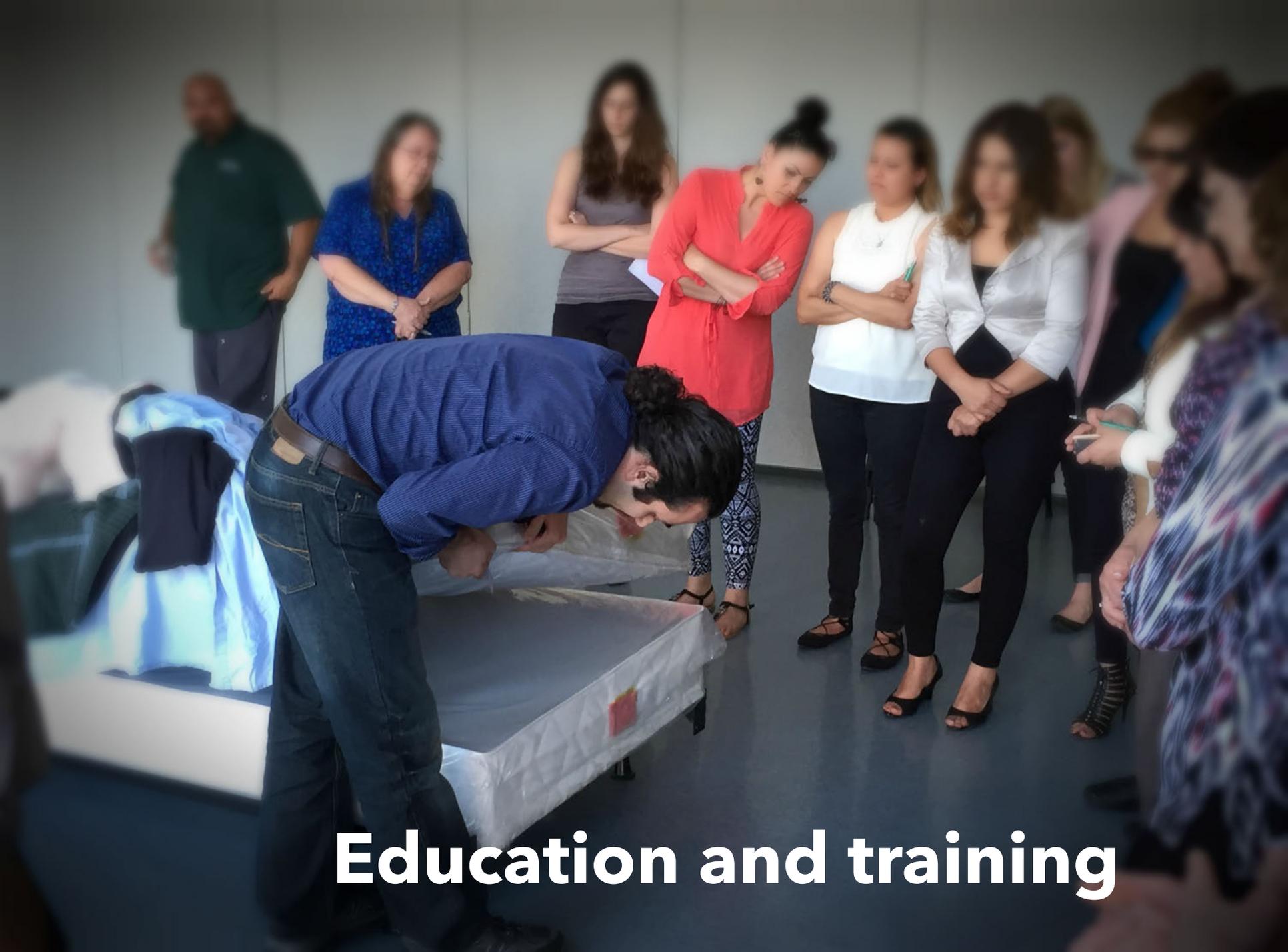
Find this log at
StopPests.org

FOCUS UNIT TRACKING LOG

Name/Address of Property: _____

The IPM team identifies areas or units of focus and coordinates IPM efforts. This sheet unites pest control, housing, and maintenance record-keeping systems. Keep it in the front of the IPM log.

Date	Unit / Location	Name of Staff Member / Technician	Pest Level	Repairs Needed		Recent or Current Focus Unit?	Housekeeping / Lease Compliance	
			Note any pests and circle the level of infestation. Involve your PMP.	Work order number or problem description	Check when completed	Yes or No	Housekeeping level* (circle one)	Action taken (e.g., met with tenant, sent violation notice)
			Type of Pest: Light Moderate Heavy				G F P	
			Type of Pest: Light Moderate Heavy				G F P	
			Type of Pest: Light Moderate Heavy				G F P	
			Type of Pest: Light Moderate Heavy				G F P	
			Type of Pest: Light Moderate Heavy				G F P	

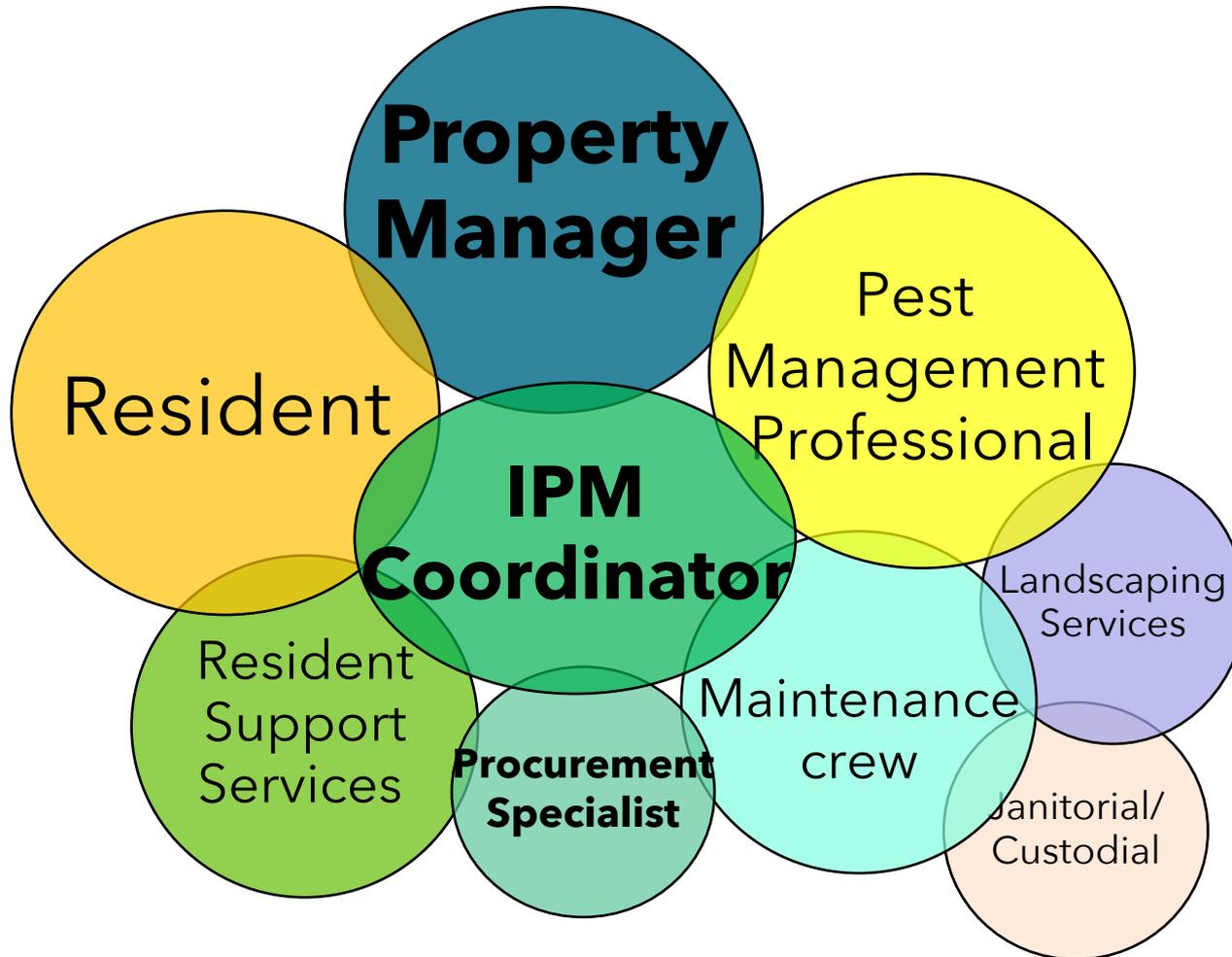


Education and training

TEAMWORK approach



The IPM team





Staff have defined roles

Leverage connections

- Mental health
- Housing services
- Protective services (older adult, child, animal)
- Public health (nurse)/Board of health
- The local health department (inspectors, sanitarians, community health workers)
- Zoning/Inspectional services
- First responders (fire, police, EMT)
- Social worker
- Home-based care
- Heavy chore service
- Legal services
- Weatherization
- Literacy
- Smoking cessation
- Asthma initiative (health dept, children's hospitals, American Lung Association, EPA asthma Partnership)



**Proactive Inspection
Schedule
(don't rely on reports of
pests)**



Monitors!



Visit StopPests.org for more information and resources

STOP Pests in housing

[Request Training](#) [Pest Solutions](#)

IPM Guide for Affordable Housing
Free Download

News You Can Use

Free Webinar! The ABC's of Pest Control: Allergens, Baits, and Cockroaches Register Here. Cockroach infestations can get out of hand quickly in multifamily housing. Best practices and treatments can turn things around to help maintain control. StopPests in Housing is hosting a webinar on reducing asthma triggers in housing with effective cockroach control. Join StopPests on March 2nd, 2017, 2:00-3:30 EST, ... [More blog entries here.](#)

Looking for the pest control contracts webinar **Good Bed Bug Control Starts With Good Contracts?** [View the webinar here.](#)

Lowering Costs with an In-House Bed Bug Management Plan (VTech Bed Bug Webinar) Learn about what works for bed bug management in multifamily housing. [More training opportunities here.](#)

ABOUT US	WHAT IS IPM?	WORKING WITH RESIDENTS	IPM TRAINING	SUCCESS STORIES
Staff and Partners	Definitions	Residents' Briefing Video	The Training Day	Evaluate Your Success
Participating Providers	Using IPM	Help with Housekeeping	Training Materials	Case Studies
Conference Presentations	Funding Sources	Getting Help	Training Opportunities	Research Database

[Training RSS](#) [Funding RSS](#) [Blog RSS](#)



The Northeastern IPM Center receives support from the U.S. Department of Housing and Urban Development's Office of Healthy Homes and Lead Hazard Control through USDA-NIFA to facilitate this program. The materials contained herein present a research-based, balanced, and objective approach to pest management in affordable housing and are intended to be used in their entirety. Any nonobjective or partial use of the materials is not recommended. Products, vendors, or commercial services mentioned or pictured in the trainings or presentations are for illustrative purposes only and are not meant to be endorsements. Last update: March 30, 2016.