

An Introduction to IPM for NYCHA



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Visit stoppests.org for more info

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What we'll cover today

- What is integrated pest management (IPM) and why it works better than just pesticides
- What are the best ways to control the three main pests of housing: cockroaches, rodents, and bed bugs
- What role do you play
- What can you expect from NYCHA

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Pests cause problems

- Trigger/cause asthma and allergies
- Bite
- Contaminate food
- Lead people to overreact and ignore pesticide labels
- Transmit disease
- Hitchhike in belongings
- Violate housing codes

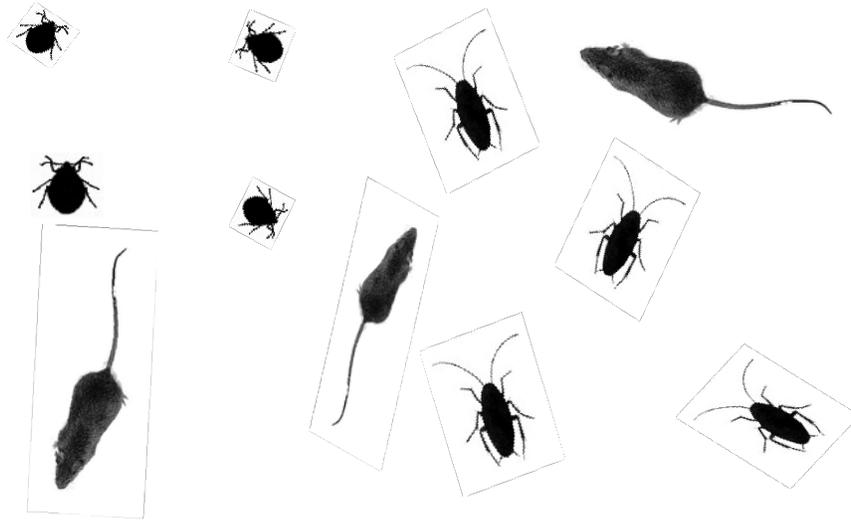


IPM makes homes healthier!

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How have you fought pests?



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We often turn to chemicals....



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IPM offers a better way

Exterminators-Pest Management Professionals (PMP) correct the conditions which cause of pest infestations and use non-chemical tools



PMP inspects for cockroaches



PMP uses steam to kill bed bugs

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NYCHA Notes: Exterminator workload

- Apartments with evidence of pests require a full IPM treatment and can take approximately 1.5 hours to complete.
- The average time for an IPM inspection: 30 minutes.
- Fewer work orders will be serviced in a day, but with IPM, fewer repeat infestations reduce the workload over time.



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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

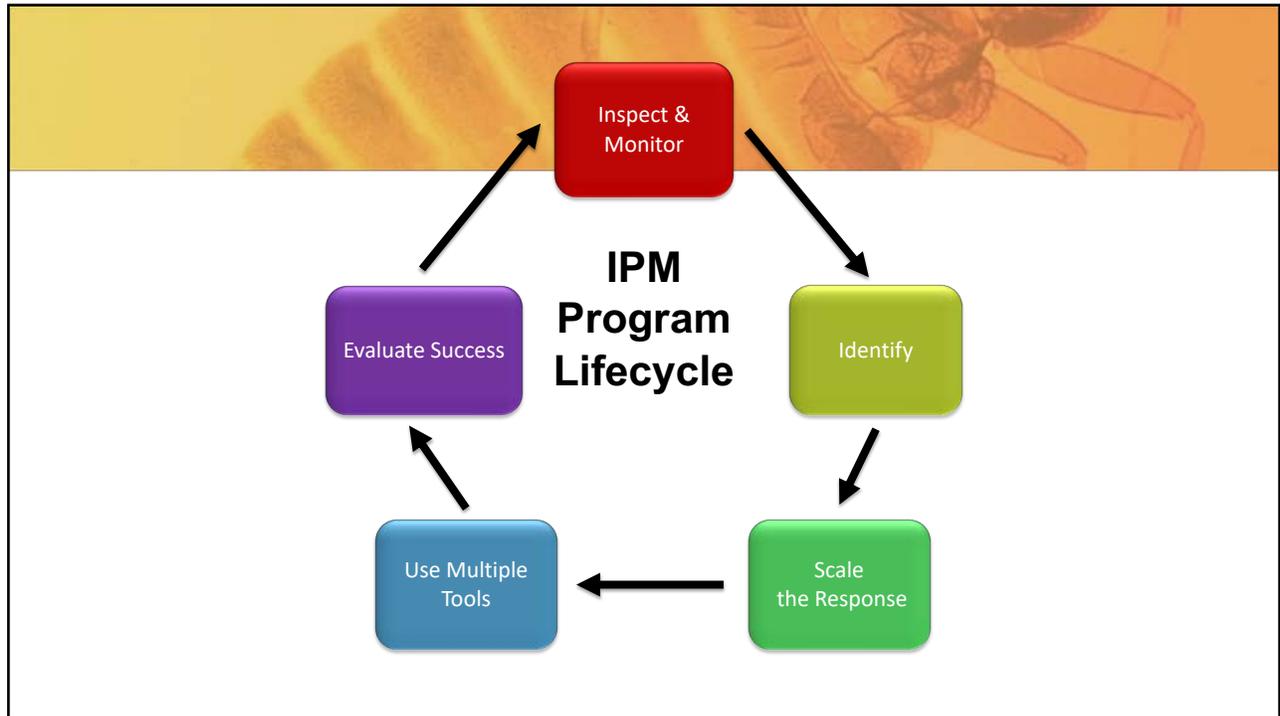
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What you will gain

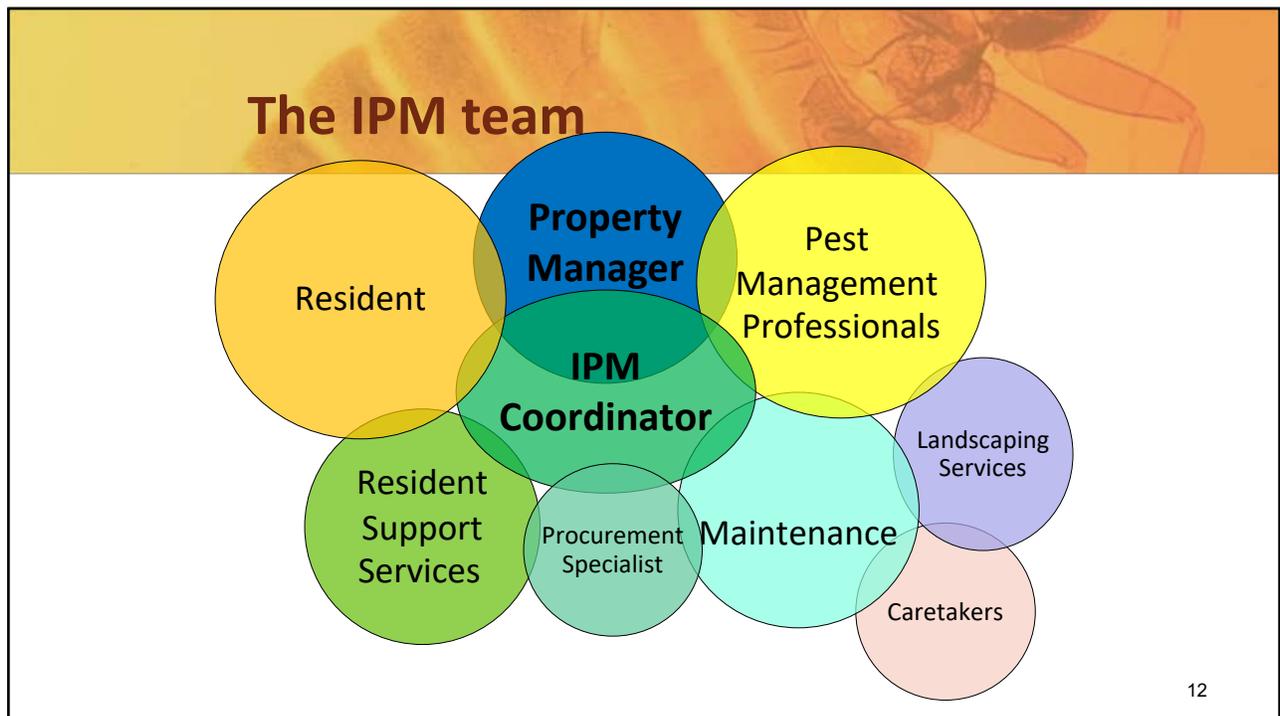
- **Cost savings:** Lower pest management costs over time
- **A healthier building:** Fewer asthma attacks, less exposure to pesticides, and less of a chance you will take pests home
- **Fewer complaints:** A Boston Housing Authority development reduced cockroach work orders by 68% after one year of IPM
- **Fewer pests:** You can stop infestations from growing and spreading disease

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What does HUD say about pest control?

Real Estate Assessment Center (REAC)

- **Deficiency:** Evidence of rats, mice, cockroaches (droppings, holes)
- **Infestation:** Live roaches, mice or rats; more than one dead roach



- Promotion of Integrated Pest Management ←

(NOTICE: PIH 2011-22) "IPM efforts must involve PHA staff, contractors, residents, and include:..... Establishing an ongoing monitoring and record keeping system for regular sampling and assessment of pests, surveillance techniques, and remedial actions taken, include establishing the assessment criteria for program effectiveness."

- Guidelines on Bed Bug Control and Prevention in Public Housing

(NOTICE: PIH-2012-17) "Within 24 hours of the tenant report, the PHA should make contact with the tenant, provide the tenant with information about control and prevention of bed bugs and discuss measures the tenant may be able to take in the unit before the inspection is performed. [Inspection should take place] within **three business days of tenant complaint.**" **PHA may not charge tenant.**

If you are not familiar with these, look them up at HUD.gov

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IPM in practice: Documentation AND Oversight is key

- Property management must review the pest control records periodically to look for treatment failure (Borough scheduler too!)
- Maximo system tracks follow-up inspections after treatments
- PM records issues with compliance takes action at their discretion when resident is non-compliant
- Property managers see every pesticide ordered (iProcurement) for their buildings (no overstocking!)

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NYCHA Notes: Maximo

- A computer software application used by NYCHA to support maintenance and repairs. Maximo generates parent and child work orders and tracks inspections, preventive maintenance, corrective maintenance, and extermination activities.
- Inspection (IN) Work Order: A record created in Maximo to capture IPM inspections.
- Mandatory IPM inspection and control occurs with: a resident-generated request, employee-initiated request, adjacent apartment inspections, or move outs (vacant apartments are inspected after the resident has moved out).

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Pesticides

- ☛ Pesticides should be applied **only by a licensed PMP**
- ☛ The label is the law
- ☛ EPA does not test efficacy, only risk/benefit when used in accordance with the label



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Concerns with pesticides

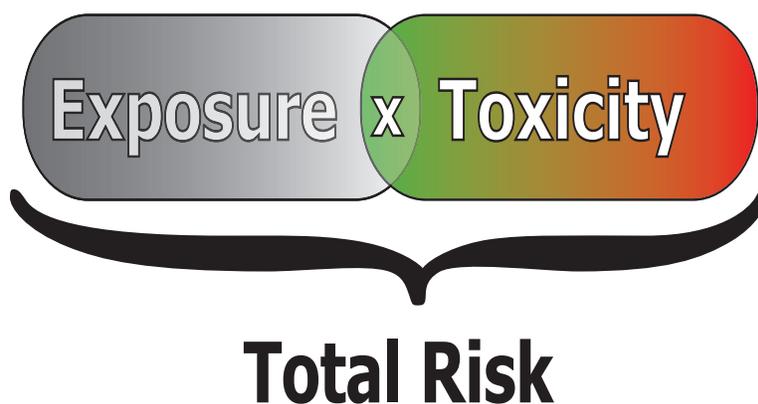
- ☛ Pests become tolerant of or avoid pesticides
- ☛ Risk from exposure may outweigh the benefit
- ☛ Possible harm to people, pets and wildlife
- ☛ Certain populations may be especially vulnerable or sensitive to some pesticides:
 - Elderly, children, pregnant women
 - People with breathing or lung disorders such as asthma
 - People with chemical sensitivities



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Pesticide risk



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Pesticide risk

Less risk of exposure ← → More risk of exposure



Tamper-resistant station



Gel bait in a crevice



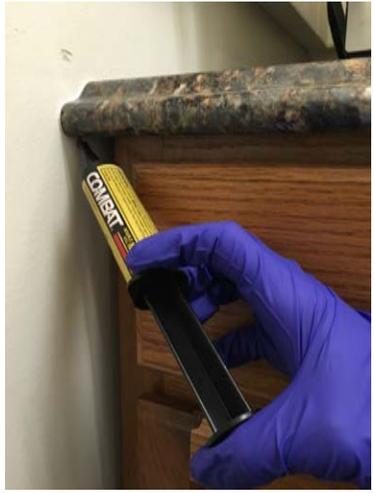
Total release fogger

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Which is riskier?



VS.



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Illegal pesticides



Unlabeled Mothballs Chinese Chalk Tres Pasitos

- Products without an EPA label are illegal
- Educate residents on the dangers
 - Report illegal sales to the EPA or to the state pesticide licensing agency.

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Priority pests of housing




- ⊗ **Cockroaches** cause asthma, trigger asthma attacks, and contaminate food
- ⊗ **Rodents** such as mice and rats carry diseases, bite, destroy property, may cause fires, and may trigger asthma attacks
- ⊗ **Bed Bugs** and their bites are stressful, very expensive to eliminate, & may contribute to asthma and allergies.




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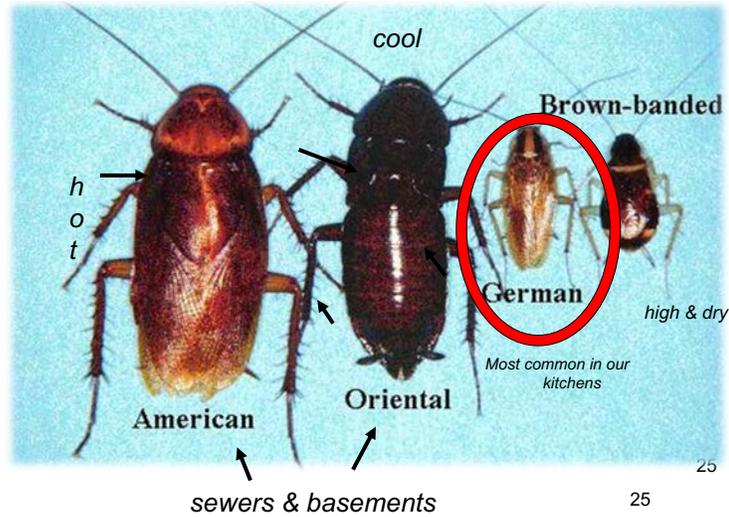
NYCHA Notes: response times

- Complaints involving bed bugs, roaches, mice, and fleas have a Maximo priority level “4,” indicating the initial response time must be within **7 days**.
- All other pest complaints have a Maximo priority level “3,” indicating the initial response time must be within **10 days**.

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Common Cockroaches

Also known as...
roaches
cucarachas, *water bugs*



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Cockroaches are Health Hazards



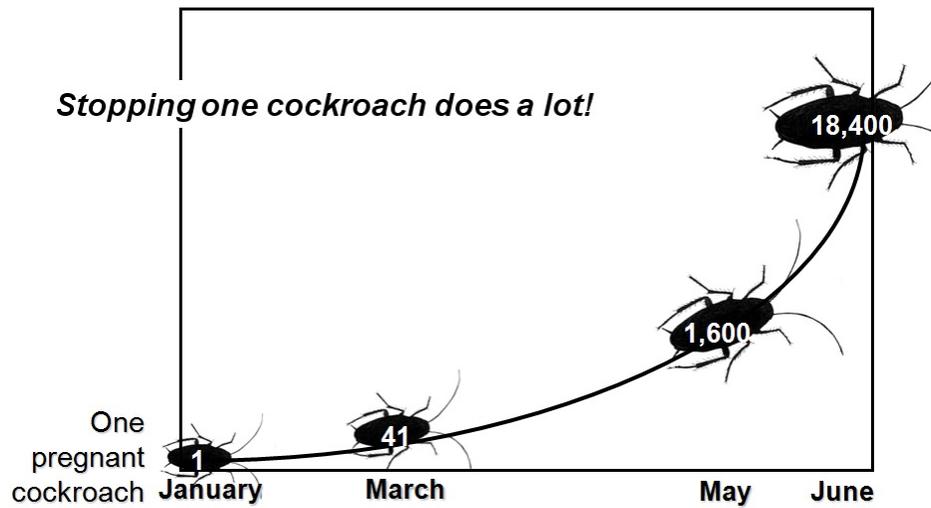
Cockroaches and their frass:

- ✦ Make asthma worse in sensitive people
- ✦ **Cause** asthma in preschool-aged children
- ✦ Cause or aggravate allergies
- ✦ Contaminate food, dishes, and counters
- ✦ **We must clean the dead roaches, skins & frass!**

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One German cockroach, 1/2 a year...



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Where cockroaches live

- ✦ Prefer spots near water but also need food and warmth
- ✦ In cracks and crevices where their bodies touch surfaces above and below
- ✦ Anywhere in a building
- ✦ Residents and staff should keep an eye out and report



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What cockroaches eat

- ✦ Crumbs
- ✦ Grease
- ✦ Trash
- ✦ Cardboard glue
- ✦ Just about anything*

*This helps control with baits



Under the bag in a trash can

Whose role should it be to clean? What do you do when residents don't?

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Where cockroaches drink

- ✦ Sinks
- ✦ Counters
- ✦ Floors
- ✦ Pet bowls
- ✦ Shower stalls
- ✦ Sweaty pipes and leaky pipes
- ✦ Refrigerator drip pans and gaskets
- ✦ AC units

Whose role to remove water source? Depends. If water comes from plumbing or appliance deficiency it's a maintenance issue.



Sources of water in a kitchen

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Got cockroaches? Now what?

- ✦ **Residents:** clean up food and dishes (limit food source), REPORT
- ✦ **Staff:** report, monitor resident compliance, intervene when treatment fails, notice patterns
- ✦ **PMPs (exterminators)** Use solutions that provide:
 - ✦ Most effective prevention and control
 - ✦ Least risk to residents and staff
 - ✦ Monitor
 - ✦ Follow-up in 1-4 weeks with inspection and treatment



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Everyone can inspect and report cockroach sightings



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NYCHA Notes: common areas

- Development employees must create a work order when pests or conducive conditions are found in common areas/offices.
- Property managers and property maintenance supervisors must inspect all public spaces **every month**.
- A work order for exterminators must be created for treatment to be performed immediately after the inspection.
- These spaces include building basements, compactor rooms, tank rooms, boiler rooms, utility rooms, shop areas, storage rooms, slop sinks, hallways, community centers NYCHA-managed senior centers, management offices, resident association rooms, hallways, and development grounds, community and senior centers.

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Everyone can look at monitors

Monitor by placing sticky traps near areas where cockroaches might travel - at corners and near warmth, food, and water



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Maintenance's Role: Exclusion

Seal or fix cracks, or holes that cockroaches could get through. Use:

- ✦ silicone caulk
- ✦ copper mesh
- ✦ screens
- ✦ door sweeps —
always on boiler rooms and exterior doors



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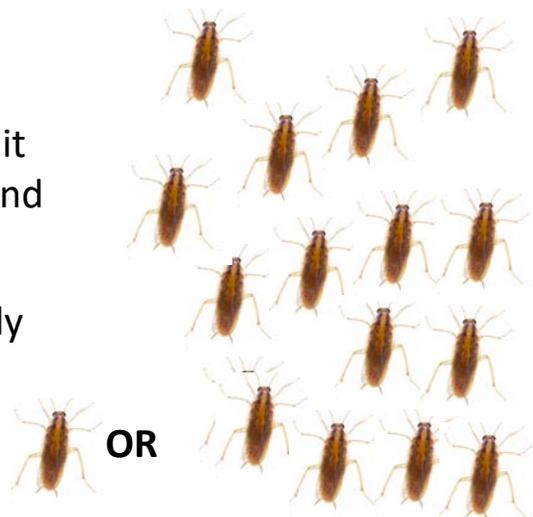
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PMP role: treatment

- ✦ Ideally, sanitation first
- ✦ Monitoring and inspection before bait treatment to determine how much and where to apply
- ✦ Only licensed individuals should apply pesticides



OR



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PMP's Role: Baits

- The most effective pesticide option
- Cockroaches feed on the bait, take it back to the hiding spots where other cockroaches live and “share”
- Use in every room where inspection finds evidence



Gel Bait



Bait Station

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PMP's role: Baits

- Works best when:
 - Bait is the only food
 - Not contaminated with sprays and scented cleaners
- Will still work where sanitation is low



PMPs apply gel bait

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Prohibit use of over-the-counter sprays and foggers

- ✦ Over-the-counter sprays & foggers are not part of IPM in multifamily housing
- ✦ They are not compatible with baits
- ✦ Cockroaches develop resistance



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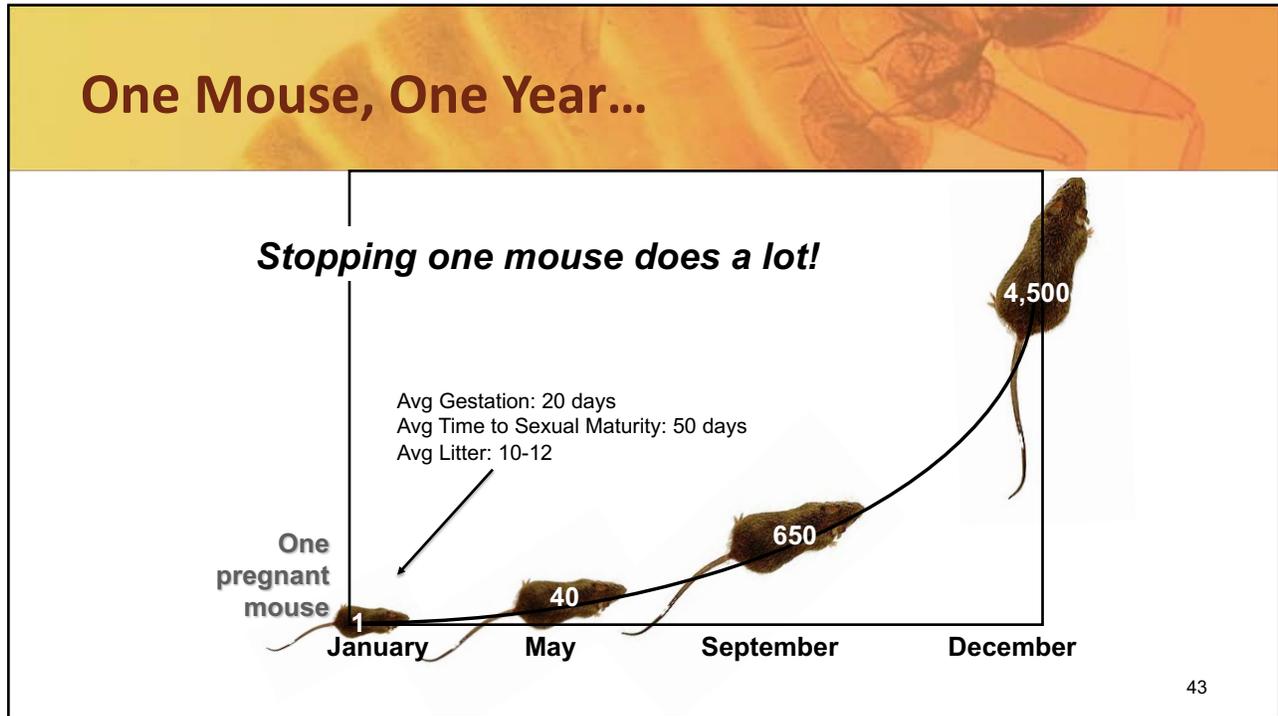
Rodents are health hazards

- Carry infectious diseases
- May cause asthma attacks
- Bite
- Damage food and property
- Can attract other pests
- Are repulsive



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Everyone should know the signs of Rodents

- Sightings
- Droppings
- Noise
- Dog or cat alerts
- Gnaw marks
- Rub marks
- Holes
- Indicator pests
- Nests
- Smell
- Rat burrows

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Droppings and Urine stains



Rodent urine stain in dropped ceiling



Mouse droppings

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Holes and Rub Marks



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Everyone should report sightings

- Identify:
 - Rat or Mouse
- Location & Date
- How Many
- Obvious food source
- Note Action Taken
- Follow-up



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How do Rodents Get In?

Find out! Conduct a thorough inspection:

- Outside: doors, utility lines
- Inside: appliances, heaters, corners, floors, closets & basement
- Where have you seen them?
 - Mice rarely travel more than 10 feet from their nest for food



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NYCHA Notes: filling holes and fixing leaks

When large holes (two inches by two inches or greater) in walls or leaks are found, exterminators must contact property management supervisory staff in person to create a follow-up work order for skilled trades to complete. They then send an e-mail summarizing the conversation to the property manager and supervisor of exterminators.



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Whose job?



Fill the gaps

Maintenance employees must install rodent-proof door sweeps on **every** exterior door having a 1/4 inch gap or larger.



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Once inside, where do they live?

Under and in stoves



Baseboard heaters



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Always check stoves



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Exclusion

Deny, deny, deny
&
Maintain, maintain,
maintain



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Rats

Complaints involving rats have a Maximo priority level of “7” indicating the initial response time must be within **24 hours**.



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Where Rats Live

- Exterior: Burrows, usually associated with trash
 - Travel 150-450 feet from burrow; prefer to live close to food and water
- Crawl spaces become infested if food trash collects along the exterior
- Indoors: trash rooms, wall and ceiling voids, concrete hollow block walls, and other nooks
 - In high-rise buildings pay attention to compactor chute. Clean regularly and keep in good repair



Norway Rat Burrow

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NYCHA Notes: Caretakers

- Caretakers assigned to a building must inspect the grounds and common areas of that building no less than once every 24 hours for cleaning and maintenance needs, including pests and trash.
- Caretakers assigned to a building must ensure that trash on the grounds or common areas of that building is collected and either removed from the premises or stored in a manner that prevents access by pests at least once every 24 hours.

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Photo credit Jayne Windham

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Trash check?

- Adequate receptacles?
- Frequent garbage pickup
- Compactor, trash room and chutes cleaned regularly?



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NYCHA Notes: Caretakers

- Daily: Inspect compactor room for holes that rodents or insects can use.
- Notify supervisor of the first sign of a pest infestation
- Stuff small holes with metal mesh and foam.
- Report larger holes to their supervisor (for maintenance or skilled trades)
- Report the presence of rats, mice, roaches, or water bugs through the work order management system



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NYCHA Notes: Caretakers

- Close doors and windows to exclude pests.
- If airflow is required, request screening be installed.
- Reduce clutter, remove boxes, accumulated materials, and scheduling removal of old appliances and fixtures.
- Thoroughly clean compactor rooms with disinfectant, especially corners where materials will accumulate.
- Complete NYCHA Form 060.244, *Quarterly Record of Compactor Room and Pest Control Operations Treatment*, on a daily basis. The form must be displayed in the compactor room.



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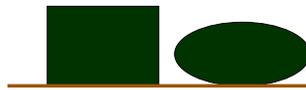
Landscaping and Grounds

Landscape matters

- No coverage for rat travel and burrowing
- Plant placement never touching the building



Shapes rats avoid



Shapes rats seek

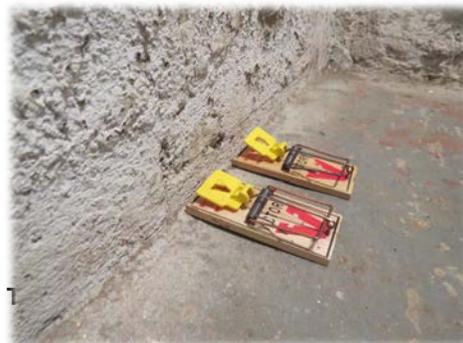


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Traps

- Effective and reusable
- More ARE better
- Check often
- Placement is key
 - Place the trap against the wall where rodents travel.
 - The bait side of the trap should touch the wall.



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About Glue Boards...



- May catch an occasional adult rat or mouse but they usually don't "stick" around.



- Mostly catch juvenile mice and rats
- Can indicate nest nearby
- How will your residents cope?

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PMPs Role: Targeted Chemical Use (PMP only)

- The label is the law
- Most rodent baits require tamper-resistant stations
- Read the label on both the station and the bait
- Bait station should be:
 - Secured
 - Locked
 - Labeled
- If rodents are inside, consider using traps



Opened bait station
(only PMPs should open bait stations)



Dry ice used in a rat burrow.
(NBC Chicago)

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PMPs Role: targeted chemical use



Bait boxes have little or no effect on any rodents already inside...

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PMPs Role: targeted chemical use



Bait boxes have little or no effect on rodents if they are not serviced

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Resident's Role: sanitation

- Would a rodent eat this,



- When it could eat this?

Sanitation is important!



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What about mouse dropping clean-up? CDC Recommendations for Cleaning Mouse Urine and Droppings

- Wear an N-95 mask and gloves
- Spray the nest, urine, and droppings with disinfectant or a mixture of bleach and water
 - One part bleach to 10 parts water
 - Let soak 5 minutes
 - For commercial disinfectant, following the label for dilution and disinfection time
- Use a paper towel to pick up the urine and droppings
- Dispose of waste in sealed bag



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Prevention & Control

- Sanitation (residents and caretakers):
 - Eliminate food source helps to eliminate rodents
- Exclusion (Maintenance and PMPs):
 - As important as sanitation
- Traps (resident?, PMPs, maintenance, caretakers):
 - Proper placement is critical
- Rodenticides (PMP only):
 - Last resort, not highly effective without sanitation and exclusion, PMP only

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Bed Bugs

- Signs of bed bugs
- Roles and responsibilities



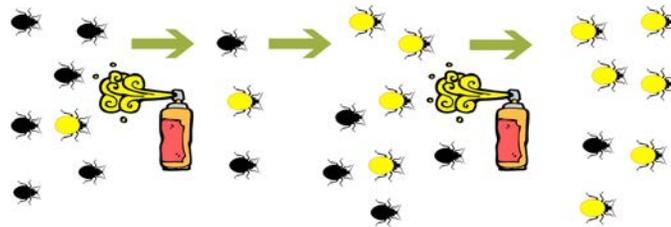
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Why are bed bugs so hard to kill?

- ☛ Change in pesticide availability and use
- ☛ More travel/mobility of people
- ☛ More infested locations -> More infested locations
- ☛ Lack of preparedness of society in general

Pesticide resistance:

- ☛ Within 2-20 years insects show resistance to new pesticides (DDT)
- ☛ Chemicals alone will not work!



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A little biology



Bed bugs mating



Close up of eggs

Female bed bugs lay ~200 eggs in a lifetime; 1-5 eggs per day.

From egg to adult – 5 weeks to 4 months

Molt 5 times; feed before each molt



Adult and nymphs

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Bed bug life cycle



Fed



Not recently fed

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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...



Photo: Dr. Dawn Gouge

Bed bugs hiding in a screw hole

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Can be confused with...



Carpet Beetle and larva



Tick



Mosquito Bites



Cockroach Nymph



Bat Bug



Spider Beetle

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Bed bugs are a pest of public health significance

- ✦ Result in stress, loss of work, loss of productivity, loss of sleep, and financial burden
- ✦ Cause secondary infections after people scratch their bed bug bites
- ✦ Bed bugs do not transmit disease *under normal living conditions*.



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Signs of bed bugs

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



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Everyone: look for signs



Shed skin



Bed bug signs on a mattress seam

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Everyone: Inspect where bed bugs live

- ☛ Only inside homes and buildings
- ☛ In any crack or crevice where a credit card edge could fit
- ☛ On any item near where people rest



Couch cushion zippers



Mattress piping



Stuffed animals



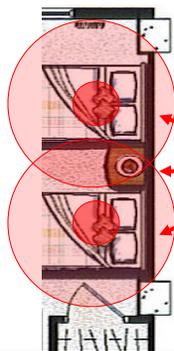
Switch plates

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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?

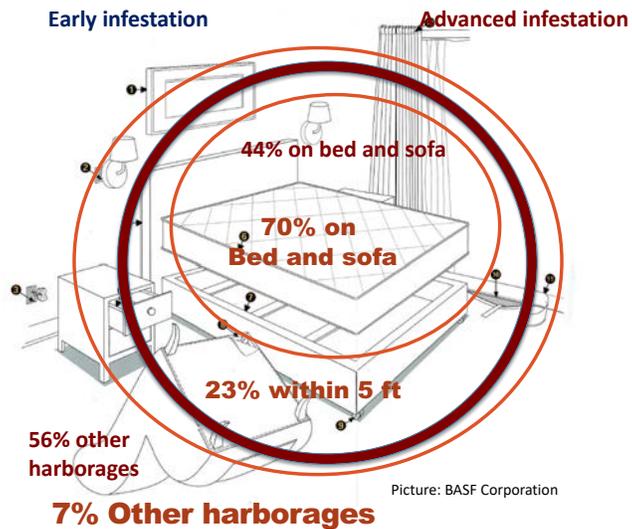


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Early detection is key

- Early infestations of bed bugs usually are close to the bed and typically take 2-3 treatments.
- Advanced infestations spread further, will cost more to control. 5 or more chemical treatments are possible.



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PMP or trained staff: Inspection

If bed bugs are found, inspect and place monitors in all adjacent units and across the hall.



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Proactive inspection! (Do not rely on complaints)

Many don't report because:

- ✦ They are afraid they will be charged \$, denied residency, or evicted
- ✦ Are embarrassed to complain
- ✦ Are unaware of the signs
- ✦ May not react to bites
- ✦ A recent Rutgers study found managers unaware of almost 70% of infestations



Use monitors and proactive inspection!

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Bed bug monitors (part of your proactive program)

- ✦ Interceptors plus visual inspection can detect up to 95% of infestations
- ✦ Trap and kill bed bugs
- ✦ Determine how bad the infestation is
- ✦ Two types
 - ✦ Passive
 - ✦ Active



Passive, moat-style interceptor (ClimbUp)



Passive, moat-style DIY interceptor from University of Florida/ IFAS Extension



Active monitor, Includes lure (SenSci Activ Volcano)



Nattaro Scout, includes lure

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Monitors in Action



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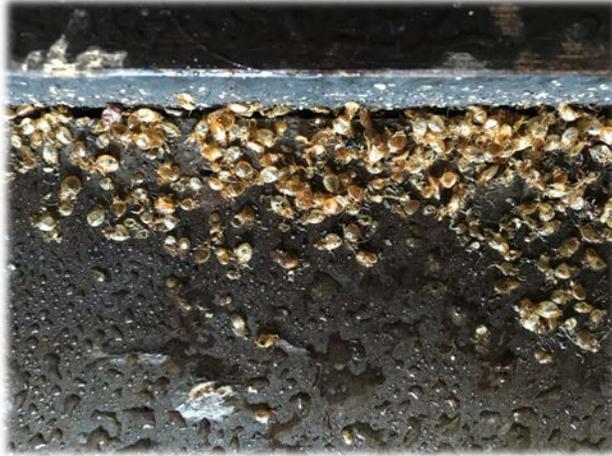
Know your treatment options

- ☒ Vacuuming
- ☒ Isolation
 - ☒ Encasements
 - ☒ Clear bags
 - ☒ Closed plastic containers
 - ☒ Make the bed an island
- ☒ Freezing *not as reliable as heat
 - ☒ Chest freezer
 - ☒ Cryonite
- ☒ Heat 
 - ☒ Clothes dryer
 - ☒ Steam
 - ☒ Container
 - ☒ Whole unit
- ☒ Pesticides
 - ☒ Spray
 - ☒ Dust
 - ☒ Fumigation

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Vacuum – why?



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Mattress encasements

- ☛ Vacuum bed bugs you can see
- ☛ Cover any sharp points
- ☛ Cover mattresses and box springs
- ☛ Ensure a snug fit, zip, seal, and check for rips
- ☛ Leave it on for 1 year
- ☛ Can eliminate the need to treat mattresses
- ☛ Encases any remaining bed bugs so they cannot bite



Use encasements rather than discarding

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Heat

- ☛ Whole unit heat treatment
- ☛ Portable heat chambers
- ☛ Steam — (training needed)
- ☛ Clothes dryers
 - ☛ free tokens or one machine designated *bed bug treatment only*



Building staff at a property in Pennsylvania test out their new ZappBug portable heat chamber.

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Steam



Photo: Susanmah Reese

- ☛ Provides immediate kill of all life stages
- ☛ Penetrates into cracks and 1-2 cm into fabric, up to 6 cm in cracks
- ☛ No pesticide residue
- ☛ Slow!

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Understanding pesticide treatments

- ❖ There is no silver bullet.
- ❖ Liquid pesticides have limited residual effect
- ❖ Most sprays only work on contact
- ❖ The most effective chemicals are combination products (neonicotinoids + pyrethroids)
- ❖ Dusts are effective as long as they are kept dry
- ❖ ***MUST BE ROTATED!***



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Keep Talking

With Staff:

- ❖ Meet meet meet –with staff, residents and pest control company/technicians
- ❖ Work order system will autogenerate follow-up for heavy infestations but make sure you aware of the issues so you can make referrals

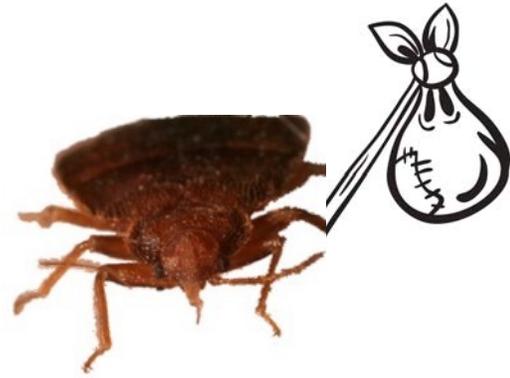
With PMP:

- ❖ Know what treatment they are using and understand how it works
- ❖ Direct pest control time and resources to heaviest infestations first
- ❖ Evaluate success or failure to eliminate pests

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Education and training is a continuous process

- Pest introductions
- Staff turnover
- Resident turnover
- New information



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Work with tenants

- ☛ **Key Messages:**
 - ☛ **Inspect, report, don't self-treat, don't throw out furniture or pick up discarded furniture, launder bedding regularly, and vacuum**
- ☛ Posters and brochures – help ID and encourage reporting
- ☛ Classes/meetings - Keep it simple.
- ☛ One-on-one intervention – when needed



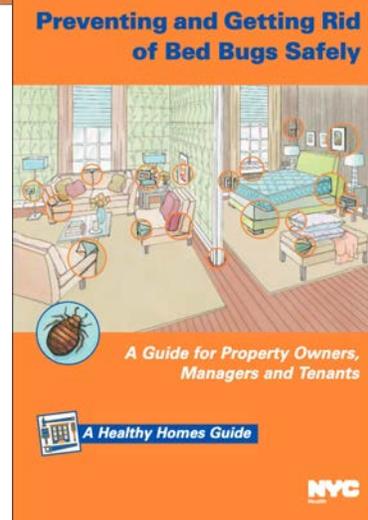
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NYCHA Notes: resident engagement

- Communicating the Resident Role in IPM
- Property managers notify residents of a scheduled exterminator visit.
- Property managers field questions and understand treatment
- Educate residents on best practices for keeping homes pest-free

<https://www1.nyc.gov/site/doh/health/health-topics/bedbugs-information-for-homeowners-and-tenants.page>



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NYCHA Notes: Tenant notification

- Encourage residents to report pests through Customer Contact Center (CCC) or using the MyNYCHA App.
- Residents are required to provide access and are notified in writing at least 48 hours prior to scheduled appointments.
- Caretakers or other designated employees under the responsibility of the property manager distribute NYCHA Form 042.748, *Routine Extermination Tenant Notice*, to residents at least 48 hours prior to scheduled **routine** inspections and treatment. It is auto-generated by Maximo.
- The CCC schedules automated reminder calls to residents 48 hours prior to the date of the scheduled appointment.

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NYCHA Notes: Emergency and priority notification

- Emergency and Priority Notification
- For services of a higher priority or urgent nature, where service is scheduled in less than 48 hours, the CCC informs the resident directly by phone of their appointment date and time.
- Residents previously indicating health conditions result in elevated priority and faster response times
- The resident is advised to contact the CCC and request to reschedule if no substitute can be arranged to allow entry

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NYCHA Notes: Employee-initiated work orders

When any NYCHA employee observes any pest activity, conditions conducive to pests, or harborage they must report it in person to the property manager, property maintenance supervisor, assistant property maintenance supervisor, or supervisor of caretakers so they can create a work order. They then send an e-mail summarizing the conversation to the property manager and supervisor of exterminators.

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NYCHA Notes: Types of work orders

Preventive Maintenance (PM) Work Order

A record created in Maximo to capture proactive IPM treatment of apartments, development grounds, and common areas to promote maximized use of IPM principles on NYCHA properties and avoidance of unplanned corrective maintenance tasks.

Inspection (IN) Work Order

A record created in Maximo to capture IPM inspections.

Corrective Maintenance (CM) Work Order

A record created in Maximo to capture resident requests for IPM service (all extermination appointments at NYCHA) scheduled through the Customer Contact Center (CCC) or the MyNYCHA App, or requests for IPM service created by property management or a NYCHA department.

Violation (VI) Inspection Work Order

A record created in Maximo to capture IPM inspections created in response to a Commissioner's Order to Abate (COTA) issued by the New York City Department of Health and Mental Hygiene.

Siebel

A case management software application used by NYCHA that captures maintenance and repair complaints made by residents.

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NYCHA Notes: Supplies you should have available

Supplies needed:

Xcluder mesh, caulk, escutcheon plates, foam, and Masonite.

Make sure your shops and staff have these items to do the work. PAIS has a full list with HAs

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NYCHA Notes: procuring supplies

iProcurement, part of the Oracle system, is NYCHA's self-service requisitioning software for the purchase and supply of services. Requisitions are created and processed, and receipts are entered in iProcurement.



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The screenshot shows the 'STOP Pests in housing' website. At the top, there are navigation buttons for 'Webinars', 'Request Training', and 'Pest Solutions', along with a search bar. Below this is a featured article titled 'News You Can Use' with a date of August 29, 2018, and a link to a free webinar on cockroaches and rodents. Below the article are sections for 'ABOUT US', 'WHAT IS IPM?', 'WORKING WITH RESIDENTS', and 'IPM TRAINING'. At the bottom right, there are three RSS feed buttons: 'Training RSS', 'Funding RSS', and 'Blog RSS'. Red arrows point to the 'Webinars' button, the 'News You Can Use' article, the 'WHAT IS IPM?' section, and the 'Blog RSS' button.

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Certificate of Completion

Awarded to:

Upon the completion of the 90 minute training:
“An Introduction to IPM for NYCHA staff”

November 21 & 22, 2019



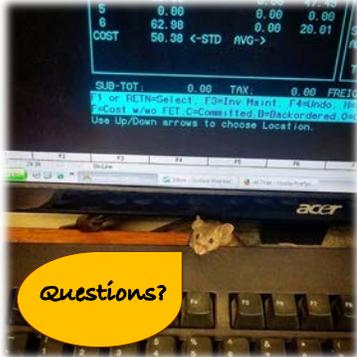


Susannah Reese
 Project Coordinator
 StopPests in Housing

Integrated Pest Management for environmental, human health, and economic benefits

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contact



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 Visit www.StopPests.org
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Take the quiz and download your certificate here:
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