


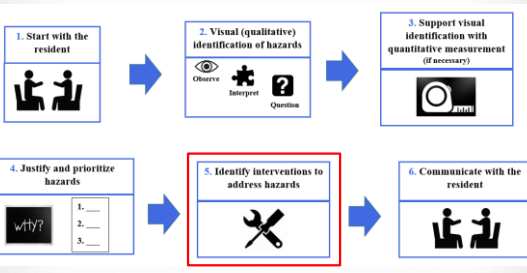
Module 7

Step 5: Identify Interventions to Address Hazards



Healthy Housing Solutions^{INC.}

KEY STEPS



1. Start with the resident

2. Visual (qualitative) identification of hazards

3. Support visual identification with quantitative measurement (if necessary)


4. Justify and prioritize hazards

5. Identify interventions to address hazards

6. Communicate with the resident

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KEY STEPS



- Intervention resources
- Review of interventions by Keep it principle
 - Focus on Integrated Pest Management

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Health impacts of housing hazards in eight categories:

- 1. Moisture
- 2. Sanitation
- 3. Pests
- 4. Ventilation
- 5. Safety
- 6. Contaminants
- 7. Maintenance
- 8. Comfort

- 1. Dry
- 2. Clean
- 3. Pest-Free
- 4. Ventilated
- 5. Safe
- 6. Contaminant-Free
- 7. Maintained
- 8. Climate Controlled

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SOURCE OF RESOURCES & REFERENCES

Promote evidence, not opinion

www.nhahousinginstitute.com/training

NATIONAL RESOURCES

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INTERVENTIONS

Healthy Homes Issue:
Residential Assessment
July 2012

U.S. Department of Health and Human Services
U.S. Department of Housing and Urban Development

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Table 3: Overview of Assessment Strategies for Selected Environmental Hazards

Environmental Hazard	Assessment Strategy					Visual Inspection	Sampling	Testing	Remediation
	Visual	Interview	Survey	Direct	Indirect				
Lead-based paint	X	X	X	X	X	X	X	X	X
Asbestos	X	X	X	X	X	X	X	X	X
Radon	X	X	X	X	X	X	X	X	X
Carbon monoxide	X	X	X	X	X	X	X	X	X
Flammable vapors	X	X	X	X	X	X	X	X	X
Particulate Matter (e.g., PM ₁₀ , PM _{2.5})	X	X	X	X	X	X	X	X	X
Biological Hazards	X	X	X	X	X	X	X	X	X
Water damage	X	X	X	X	X	X	X	X	X
Mold	X	X	X	X	X	X	X	X	X
Lead-based paint (dust)	X	X	X	X	X	X	X	X	X
Asbestos (dust)	X	X	X	X	X	X	X	X	X
Radon	X	X	X	X	X	X	X	X	X
Carbon monoxide	X	X	X	X	X	X	X	X	X
Flammable vapors	X	X	X	X	X	X	X	X	X
Particulate Matter (e.g., PM ₁₀ , PM _{2.5})	X	X	X	X	X	X	X	X	X
Biological Hazards	X	X	X	X	X	X	X	X	X
Water damage	X	X	X	X	X	X	X	X	X
Mold	X	X	X	X	X	X	X	X	X

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HEALTHY HOUSING MANUALS / RESOURCES

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HEALTHY HOUSING MANUALS / RESOURCES

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U.S. Department of Housing and Urban Development

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2012

2008

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New EPA Home RX - The Health Benefits of Home Performance

Research and justification

- Health & Energy
- Health Outcomes
- Case studies



10

Test Methods and Protocols for Environmental and Safety Hazards Associated With Home Energy Retrofits

Testing

- Qualitative
- Quantitative
- Familiar tests related to health risk



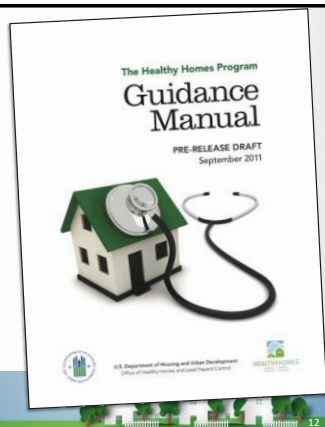
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A GUIDE FOR HEALTHY HOME PROGRAM DEVELOPMENT AND OPERATIONS

Fully comprehensive guide

- Program overview
- Interview tools
- Diagnostic guidance

<http://portal.hud.gov/hudportal/HUD?mode=dispage&id=HHGUIDANCEMANUAL>



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HUD HEALTHY HOME INTERVENTION PRIORITIES

Table 4.1 Priority List of Better Homes for Asthma (adapted from Seattle/King County Health Department)

- High priority items are indicated with an [A]
- Lower-priority items with [B] or [C].

Repair plumbing leaks [A]
Correct mold problems [A]
Clean evaporator pan under refrigerator [A]
Install range hoods that vent to exterior [A for gas; B for electric]
Repair dry floor drain traps if sewer gases detected [A]
Assure that at least one window in each room can open [A]
Remove basement, bath and kitchen wall to wall carpet [A]
Install smoke and carbon monoxide alarms [A]
Repair deteriorated bath and tub caulk [B or C]
Install pleated filter in forced-air heating system. [A]
In the crawl space, seal /cover soil with poly. [A]
Seal crawl space from house air. [A]



The Healthy Homes Program Guidance Manual: Interventions Related to Keep it Dry and Ventilated

Figure 5.2 Key Structural Controls for Moisture

1. Limit water entry (e.g., maintain gutter systems).
2. Dehumidify damp spaces such as basements.
3. Repair leaks and assure that drains work properly.
4. Clean or properly remove wet or moldy building components.
5. Manage ventilation systems so that moisture is removed at the source.



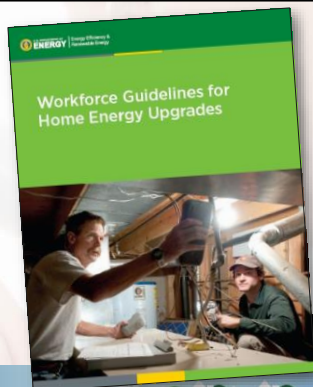
Figure 5.7 Ventilation Interventions

- Remove airborne contaminants through proper exhaust ventilation.
- Supply fresh air through dilution ventilation.
- Test for and conduct radon remediation as needed.

See Handout



**SWS-
HELPFUL
GUIDANCE FOR
SOME
IMPORTANT
INTERVENTIONS**



INTERVENTION RESOURCES

Health and Safety section <https://sws.nrel.gov/spec/2>

National Renewable Energy Laboratory: Standard Work Specifications Tool – Section 2 Health and Safety

Section 2 Health and Safety

2.01 Safe Work Practices

- 2.0100 Safe Work Practices
- 2.0102 Air Sealing
- 2.0104 Insulation
- 2.0106 Heating and Cooling Equipment
- 2.0108 Ventilation Equipment
- 2.0107 Baseload
- 2.0110 Material Safety
- 2.0111 Basements and Crawl Spaces

2.02 Combustion Safety

- 2.0201 Combustion Safety Testing-General
- 2.0202 Unvented Space Heaters
- 2.0203 Vented Gas Appliances
- 2.0204 Isolation
- 2.0205 Gas and Oil-Fired Equipment
- 2.0209 Additional Resources

2.03 Safety Devices

- 2.0301 Combustion Safety Devices
- 2.0302 Cooling Equipment

2.04 Moisture

- 2.0401 Air Sealing
- 2.0402 Drainage
- 2.0403 Vapor Barriers
- 2.0404 Space Conditioning

2.05 Radon

- 2.0501 Air Sealing
- 2.0502 Testing and Evaluation

2.06 Electrical

- 2.0601 Knob and Tube Wiring
- 2.0602 Electric Hazards

2.07 Occupant Education and Access

- 2.0701 Basements and Crawl Spaces
- 2.0702 Installed Equipment
- 2.0703 Insulation

INTERVENTION RESOURCES

ICC International Property Maintenance Code

**SECTION 304
EXTERIOR STRUCTURE**


304.1 General. The exterior of a structure shall be maintained in good repair, structurally sound and sanitary so as not to pose a threat to the public health, safety or welfare.

304.1.1 Unsafe conditions. The following conditions shall be determined as unsafe and shall be repaired or replaced to comply with the *International Building Code* or the *International Existing Building Code* as required for existing buildings:

1. The nominal strength of any structural member is exceeded by normal loads, the load effects or the required strength;
2. The arrangement of the floor or roof to walls or columns, and of walls and columns to foundation is not capable of resisting all nominal loads or load effects;
3. Structures or components thereof that have reached their limit state;
4. Siding and masonry joints including joints between the building envelope and the perimeter of windows, doors and skylights are not maintained, weather resistant or water tight;

4. Siding and masonry joints including joints between the building envelope and the perimeter of windows, doors and skylights are not maintained, weather resistant or water tight.

DOES THIS VIOLATE THE IPMC?



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KEY PROVISIONS OF CODES

- Structural Integrity
- Weatherproof
- Maintenance
- Cracks & Holes
- Loose or Rotting Materials
- Dampness & Deterioration
- Peeling Paint
- Ventilation / Windows
- Infestation
- Sanitation & Trash
- Cleanability
- Clothes Dryer
- Space Heater

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CODES RELATED TO HEALTHY HOMES

- Health / Sanitation Codes
- Housing / Property Maintenance Codes
- Landlord-Tenant Laws
- Product Standards
- Hazard Management Laws

Housing v. Building v. Zoning Codes

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LANDLORD-TENANT LAWS

- Rights and Responsibilities
- Common Requirements
 - Certificate of Occupancy
 - Duty to Pay Rent
 - Withholding Rent to Make Repairs
 - Retaliation
- Eviction and Enforcement

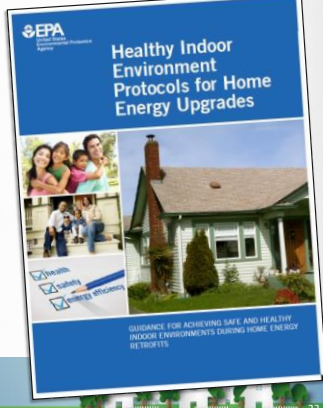




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EPA Indoor Environmental Protocols for Energy Audits

Voluntary Guidelines Include:

- Protocols
- Minimum Actions
- Expanded Actions

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WHAT TO LOOK FOR DURING THE HOME ENERGY AUDIT


ASSESSMENT PROTOCOL

HEALTHY INDOOR ENVIRONMENT
Minimum Actions

ASSESSMENT PROTOCOLS
Measures to help home energy retrofit contractors identify common indoor air quality and safety concerns in homes. This document is not a guide to diagnosing occupant health problems or building-related illnesses.

Minimum Actions
Critical actions intended to ensure work does not potentially cause or worsen indoor air quality or safety problems for occupants or workers (i.e., "Do No Harm"). EPA recommends these protections for ALL retrofit projects.

Expanded Actions
Additional actions to promote healthy indoor environments that can be taken during energy-efficiency retrofit projects. EPA recommends considering these improvements when feasible.



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WHAT TO LOOK FOR DURING THE HOME ENERGY AUDIT

ASSESSMENT PROTOCOL

HEA
Minimum Actions

SOURCE VENTILATION

Determine whether the home complies with the local exhaust requirements for kitchens and baths of ASHRAE Standard 62.2-2010, Section 5 and Appendix A, as applicable. Determine whether kitchen and bath exhausts are present and vent to the outdoors.

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HEALTHY INDOOR ENVIRONMENTS

Actions

Expanded Actions

Pre-Test Preliminary Observations	Post-Test Test Results	Minimum Actions	Expanded Actions
<2 pCi/L Observe for radon entry points and radon-resistant materials in areas of energy retrofits such as ceiling, gips, walls, windows, floor drains, heat pipes and the gap at the sill.	<2 pCi/L <2 and <4 pCi/L 24 pCi/L or 24 pCi/L	No action. Complete foundation air sealing retrofits.	For post-work radon levels between 1 and 2 pCi/L, refer client to EPA's Citizen's Guide to Radon and Contractor's Guide to Radon Reduction and/or mitigation in accordance with ASTM E2121.
<2 and <4 pCi/L Observe radon entry points and radon-resistant materials in areas of energy retrofits such as ceiling, gips, walls, windows, floor drains, heat pipes and the gap at the sill.	<4 pCi/L and NOT higher than pre-work level 24 pCi/L AND higher than pre-work level	No further minimum action.	For post-work radon levels between 1 and 2 pCi/L, refer client to EPA's Citizen's Guide to Radon and Contractor's Guide to Radon Reduction and/or mitigation in accordance with ASTM E2121.
<4 pCi/L Complete all foundation air sealing retrofits as part of energy upgrade work.	<4 pCi/L 24 pCi/L but NOT higher than pre-work level	Mitigate in accordance with ASTM E2121.	For post-work radon levels between 1 and 2 pCi/L, refer client to EPA's Citizen's Guide to Radon and Contractor's Guide to Radon Reduction and/or mitigation in accordance with ASTM E2121.
≥4 pCi/L but NOT higher than pre-work level.		Refer client to EPA's Citizen's Guide to Radon and recommend radon mitigation.	
≥4 pCi/L AND higher than pre-work level.		Mitigate in accordance with ASTM E2121.	

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INTERVENTIONS

Keep it:

2. Clean

3. Pest-Free

5. Safe

6. Contaminant-Free

7. Maintained

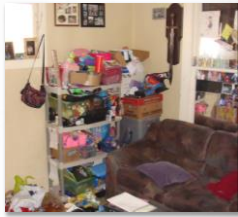
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INTERVENTIONS START WITH EDUCATION



KEEP IT CLEAN INTERVENTIONS

- Surfaces must be not just clean, but **cleanable**
- Major benefits:
 - Reduced exposure to various contaminants
 - Reduced harborage for pests



KEEP IT CLEAN INTERVENTIONS

1. Dust mite control
2. Floor choices and vacuums
3. HVAC systems / duct cleaning
4. Clutter
5. Cleaning agents
6. Portable air cleaners

EXERCISE 7: KEEP IT CLEAN INTERVENTIONS

Group 1:

- A. Dust mite control
- B. HVAC systems/duct cleaning
- C. Cleaning agents



Group 2:

- A. Floor choices and vacuums
- B. Clutter
- C. Portable air cleaners



KEEP IT SAFE INTERVENTIONS



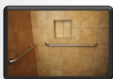
TRIPS AND FALLS INTERVENTIONS



Make sure area rugs are secure.



Install railings on stairways.



Install grab bars in bathrooms.



Install window guards on upper level windows.








Use safety gates to prevent children from falling down stairs.



What intervention does the picture show?



TRIPS AND FALLS INTERVENTIONS

 Remove trip hazards (e.g. toys and other objects).
 Repair broken stairs.
 Increase lighting in stairwells, entryways and hallways.
 Use nonskid surfaces in bathrooms.
 Make sure toilets, showers and bath entries are an appropriate height.

What
intervention
does the
picture
show?

FIRE, HEAT AND RELATED INTERVENTIONS

Hint: I'm useful because, where there's _____, there may be fire.

Hint: Put that fire out!

Hint: this helps everybody in the house knows where to go if there is a fire.



Hint: Dryers have to breathe too.

Hint: Hot water should only get so hot.



Hint: Pew, somebody throw away the rotten eggs.

Hint: A shocking problem should be fixed.

Hint: I'll know if you burn blue or yellow.

CHILD SAFETY INTERVENTIONS

WHAT SAFETY INTERVENTIONS WOULD YOU OFFER?



Photo courtesy of the Center for Environmental Health, Children's Mercy Hospital, © 2010.

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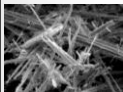
WHAT DO YOU DO IF YOU SEE THESE SITUATIONS?



Photo courtesy of the Center for Environmental Health, Children's Mercy Hospital, © 2010.

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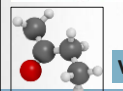
KEEP IT CONTAMINANT-FREE INTERVENTIONS



Asbestos



Radon



Volatile organic compounds

Common Household Contaminants: The Hazards and the Law	
Asbestos	... (text) ...
Radon	... (text) ...
Volatile organic compounds	... (text) ...

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ASBESTOS

Perhaps, the easiest intervention of all to remember

DON'T DISTURB –
CALL IN A PROFESSIONAL
TO TAKE A SAMPLE

© V Magn | 10 µm
10 kV 2000x Janice Haney Carr

ASBESTOS

When to call a professional:	What kind of professional?
<ul style="list-style-type: none"> You suspect asbestos, and The resident plans to remodel the home, or Building material with possible asbestos is damaged 	<ul style="list-style-type: none"> Asbestos inspectors Asbestos contractor Check state and local laws for requirements. State agencies have lists of accredited professionals. https://www.epa.gov/asbestos/state-asbestos-contacts

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FRIABLE ASBESTOS

Friable asbestos-containing material (friable ACM):

- any material with more than 1% asbestos by weight or area, depending on whether it is a bulk or sheet material **and**,
- can be crumbled, pulverized, or reduced to powder by the pressure of an ordinary human hand

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VERMICULITE



What is vermiculite insulation?
Vermiculite is a naturally occurring mineral that has the unusual property of expanding into worm-like structures when heated. The resulting structure is a light weight, insulator, absorbent and absorbent material. These properties allow vermiculite to be used to make numerous products, including attic insulation.

Do I have vermiculite insulation?
Vermiculite can be purchased in various forms for various uses. Some of the vermiculite products range from very fine particles to large (coarse) pieces, usually in bag form. Vermiculite attic insulation is a particle like, pea or pebble and is usually light brown or gold color. The package in the corner of the pamphlet and on the cover show several examples of vermiculite attic insulation.

Is vermiculite insulation a problem?
Prior to the class in 1990, much of the world's supply of vermiculite came from a mine near Libby, Montana. This mine had a natural deposit of asbestos which resulted in the vermiculite being contaminated with asbestos. Also, vermiculite was produced using vermiculite ore that contained asbestos fibers. Today, vermiculite is mined at three U.S. facilities and in other countries which have low levels of contamination in the background mineral.


How does asbestos cause health problems?
Asbestos can cause health problems when inhaled into the lungs. If products containing asbestos are disturbed, fine asbestos fibers are released into the air. Persons breathing the air may inhale the asbestos fibers. Continued exposure over time may result in lung disease such as asbestrosis, lung cancer, or mesothelioma. Smoking increases your risk of developing breast cancer in asbestos-exposed women.

EPA Guide to Vermiculite

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How to "handle" suspected asbestos

Educate your client



Asbestos
Asbestos and Health
Frequently Asked Questions


A Homeowner's Guide to Removing Sheet Vinyl Flooring with Asbestos Backing

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RADON

Fixes for Existing Housing:

- ✓ Seal floor and cracks
- ✓ Vent from below slab
- ✓ Fan sucks air – active system
- ✓ Sump suction reduces entry



A Citizen's Guide To Radon
The Guide To Protecting Yourself And Your Family From Radon

Consumer's Guide To Radon Reduction
How to fix your home

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FINDING A QUALIFIED RADON CONTRACTOR

- Contact EPA
<https://www.epa.gov/radon/find-information-about-local-radon-zones-and-state-contact-information#radonmap>
- Contact a private national proficiency programs

<http://aarst-nrpp.com/wp/> <http://www.nrsb.org/>

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VOLATILE ORGANIC COMPOUNDS

Educate for these simple steps:

1. Don't use it if you don't have to.
2. Substitute a better product.
3. Store materials properly.
4. Ventilate.

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KEEP IT VENTILATION - STRATEGIES

Exhaust Only
Central exhaust fan
Exhaust air outlet
Air flow: Positive air pressure, Negative air pressure

Supply Only
Fresh air intake
Central supply fan
Air flow: Positive air pressure, Negative air pressure

Balanced Exhaust and Supply
Room air return ducts
Exhaust air outlet
Supply fan
Fresh air inlet
Air flow: Positive air pressure, Negative air pressure

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KEEP IT MAINTAINED INTERVENTIONS

- General maintenance is essential
- Addressing lead-based paint is critical.



EPA RENOVATION REPAIR AND PAINTING RULE (RRP)

Firms performing renovation, repair or painting projects that disturb lead-based paint in homes, child care facilities and pre-schools built before 1978 must:

1. Have their firm certified by EPA (or an EPA authorized state),
2. Use certified renovators who are trained by EPA-approved training providers and
3. Follow lead-safe work practices.

Essentials Manual



FIRM CERTIFICATION

Firms that require certification:

- Anyone paid to perform work that disturbs paint in housing and child-occupied facilities built before 1978 must be certified.
- Examples:
 - Residential rental property owners / managers
 - General contractors
 - Special trade contractors



LEAD-SAFE WORK PRACTICES

BEFORE renovation, firms must distribute EPA's Renovate Right booklet

DURING renovation
Examples of requirements:


- Work area must be contained to prevent dust and debris from leaving the work area
- There must be a thorough clean up followed by a procedure to verify that the work area is free of lead contamination.



www.nhrc.com/leadbasedpaintrenovation.com/training

WHAT IS YOUR RESPONSIBILITY AS AN HHE?

- Know if a house was built before 1978,
- Identify whether the property has deteriorated paint,
- Educate the resident about the RRP requirements



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KEEP IT PEST-FREE INTERVENTIONS

Integrated Pest Management (IPM)

- The best approach to managing pests
- HUD, CDC, EPA, the National Pest Management Association all consider it the best practice in managing pests
- Not new, unproven or radical
- HUD has implemented IPM since 1995



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WHAT IS IPM?

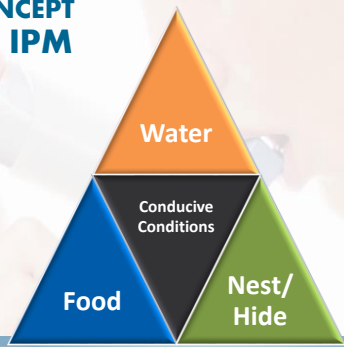
Integrated – IPM uses multiple methods that work together, and have the least risk to people and the environment.

Pest – IPM is used for many pests. We'll cover cockroaches, mice, rats and bedbugs.

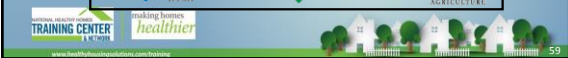
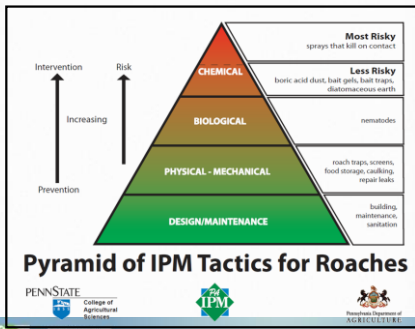
Management – you can't get rid of pests forever but you can successfully manage them.



THE CONCEPT BEHIND IPM



EXAMPLE: HANDLING ROACHES THE IPM WAY



WHAT IS IPM?

The IPM approach includes multiple, integrated tools:



Educational tools – educating residents to change behaviors so no available food, water or hiding places for pests in their house.



Physical tools – preventing pests from getting into a house (e.g. sealing up cracks in a foundation and / or using snap traps)



Chemical tools – using low-toxicity pesticides with limited exposure to people when using (e.g. cockroach bait stations)



THE SIX STEPS OF IPM

Steps	Description
1. Inspection and Identification	Inspect the property and identify the pests.
2. Exclusion	Keep the pests out of the house.
3. Educate residents	Help residents understand their important role in managing pests.



THE SIX STEPS OF IPM

Steps	Description
4. Sanitation	Make sure food, water and hiding places are not available to pests.
5. Physical and Chemical Control	Use glue traps (cockroaches), snap traps (mice), and rat traps. Use bait stations for cockroaches and insecticide dusts.
6. Monitoring	Use glue traps and snap traps to control pests and monitor property to make sure they haven't returned.



PRIMARY BENEFITS OF IPM

It's Safer

By their very nature, pesticides are toxic. IPM minimizes the use of pesticides so people, animals and the environment are much less likely to be harmed.

It Works

For insects, conventional pest control primarily utilizes spraying, and sometimes fogging. The problem with these methods is that they only kill the insects they touch. What about those that are hidden?



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1. INSPECTION & IDENTIFICATION

- Thorough inspection
- Identification of pests found



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IDENTIFICATION RESOURCES

- National Pest Management Association's (NPMA) Field Guide app for identifying pests. Go to Apple Store or Google Play Store to download (costs \$4.99).
- For cockroach identification, go to <https://ecommons.cornell.edu/handle/1813/43848>, click on "found-cockroach-bro-NYSIPM.pdf" under VIEW/OPEN.
- The University of Minnesota Cooperative Extension at: <http://www.extension.umn.edu/garden/insects/find/insects-by-category/#household>.
- The University of Kansas at: <http://entomology.k-state.edu/extension/insect-information/household-pests.html>



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WHAT TO LOOK FOR AND WHERE TO LOOK

What to look for:


- The pest (*dead or alive*)
- Pest body parts (*yes, eww*)
- Droppings (*also eww*)
- Nests and burrows

Where to look:

- Near food and water sources
- Hidden places (e.g. behind an appliance)
- Near entry holes




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Rat proofing did not work here...


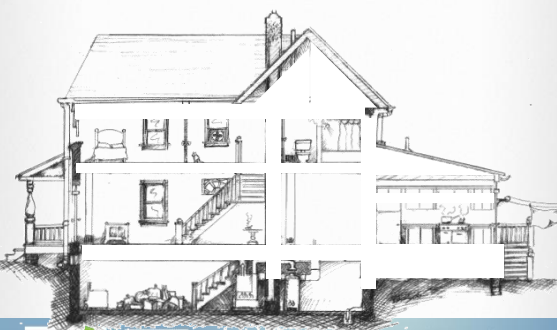
Get down on the ground and look under the pipe...

Rat burrow entrance

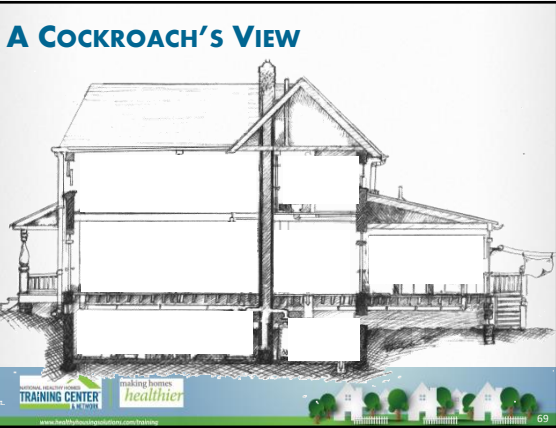


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A PERSON'S VIEW



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2. EXCLUSION

Examples:

- Install door sweeps.
- Seal cracks and crevices with silicone caulk.
- Pack larger crevices with copper or stainless steel mesh.

3. EDUCATE RESIDENTS

- Residents can make or break an IPM effort
- Facilities staff and pest management professionals are important for multifamily buildings

4. SANITATION

Photo: City of Houston Bureau of Children's and Environmental Health



03/18/2008

- Food
- Water
- Harborage



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A NOTE ON WATER

- Essential for insects & rats, but not for mice or bedbugs
- Mosquitoes
- Structural damage



03/18/2008

Photo: City of Houston Bureau of Children's and Environmental Health



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5. PHYSICAL CONTROL

- Traps
- Baits and gels
- Inert dusts
- Insect growth regulators



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BE AWARE OF ILLEGAL AND RISKY PESTICIDES

- Pesticides that look like candy - mothballs
- “Miraculous” Chinese Insecticide chalk
- “Tres Pasitos”
- Many pesticide have been withdrawn



↑
candy!



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EPA SIGNAL WORDS FOR POISONS

CAUTION

CAUTION means the pesticide product is slightly toxic if eaten, absorbed through the skin, inhaled, or it causes slight eye or skin irritation.

WARNING

WARNING indicates the pesticide product is moderately toxic if eaten, absorbed through the skin, inhaled, or it causes moderate eye or skin irritation.

DANGER

DANGER means that the pesticide product is highly toxic by at least one route of exposure. It may be corrosive, causing irreversible damage to the skin or eyes. Alternatively, it may be highly toxic if eaten, absorbed through the skin, or inhaled.

POISON

If this is the case, then the word “**POISON**” must also be included in red letters on the front panel of the product label.



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6. MONITORING FOR COCKROACHES

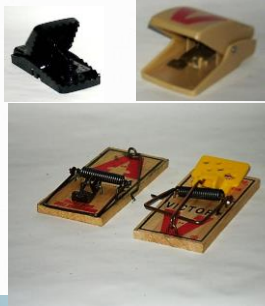
- Keep looking to spot reinfestations
- Place glue traps in corners
 - Behind appliances
 - Under sink
 - Under cover!
- Date and mark
- Don't disturb



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6. MONITORING FOR RODENTS

- Use snap traps
- Place in corners, along runways and in tight dark spaces
- Check daily
- Increase trapping if monitors indicate activity
- Always have monitors for insects and rodents in place



THE PANIC OF BED BUGS

- Can be avoided and eliminated
- Every skin irritation or bite is not bed bugs
- You can see them.
- Do not cause or spread diseases.







BED BUG - TREATMENT

- Inspection
- Vacuum
- Heat or cold
- Pesticides by PCO only
- Re-inspection and retreatment
- Encasements and interceptors







REVIEW . . . WHAT DO YOU REMEMBER?

1. 
2. 
3. 



REVIEW . . . WHAT DO YOU REMEMBER?

4. 
5. 
6. 



REVIEW . . . WHAT DO YOU REMEMBER?

7. 
8. 
9. 



REVIEW . . . WHAT DO YOU REMEMBER?

10. 

11. 

12. 



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REVIEW . . . WHAT DO YOU REMEMBER?

10. 

11. 

12. 



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