

## Building Clues: Pests and Contaminants



## Health Concerns

### Pests Can:

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

### Pesticides Can Cause:

- Eye, nose, throat irritation
- Skin rashes, stomach cramps, nausea
- Central nervous system damage
- Kidney damage
- Increased risk of cancers



## Pesticides and Poisonings



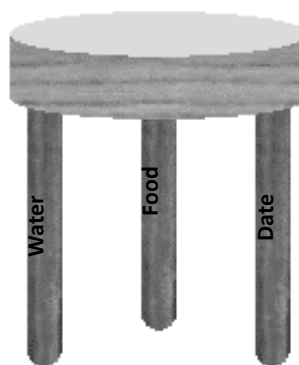
Almost half of all households with children under five stored pesticides within reach of children.

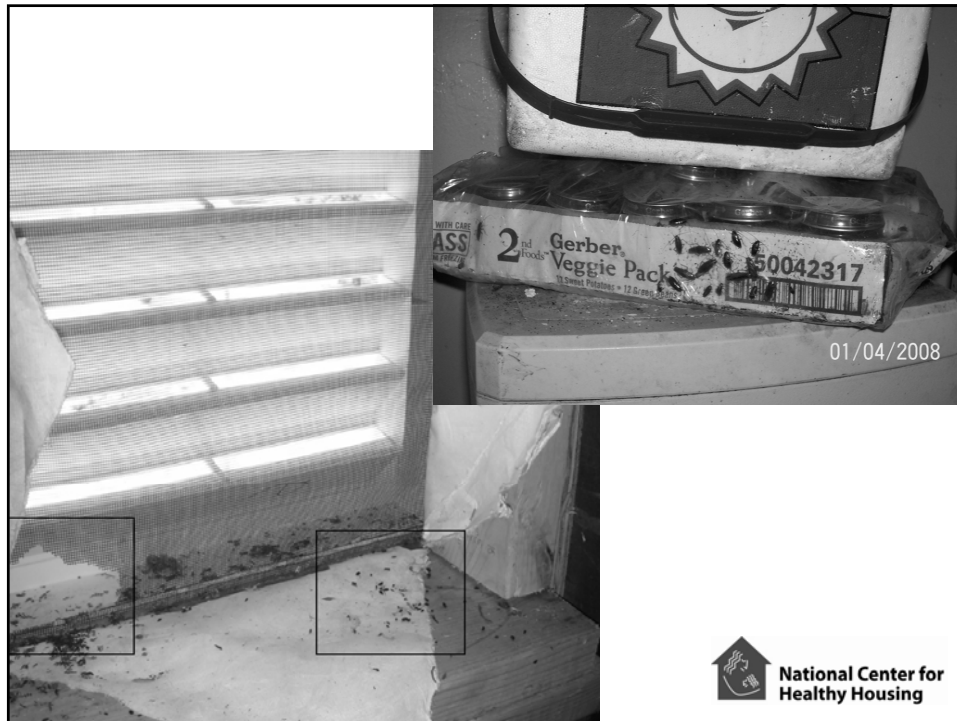
In 2003, Poison Control Centers reported 113,000 cases of pesticide poisoning.



## What all pests need

- Food
- Water
- Date (another pest)

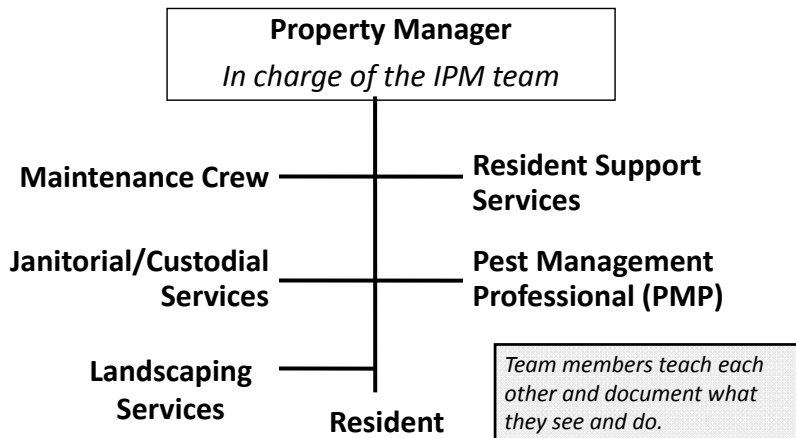




## Integrated Pest Management

- Keep them out and give them no place to hide
  - Change surrounding landscape
  - Block pest entries, passages, hiding places
- Reduce food availability
  - Practice proper food storage and disposal
  - No dirty dishes in the sink overnight
  - Clean crumbs, grease etc.
- Knock down population
  - Traps
  - Appropriate pesticides

## The IPM team



## How will you fight pests?

“Exterminator” is now a Pest Management Professional (PMP)

Use Quality Pro Certified IPM professionals  
[www.whatisqualitypro.org](http://www.whatisqualitypro.org)

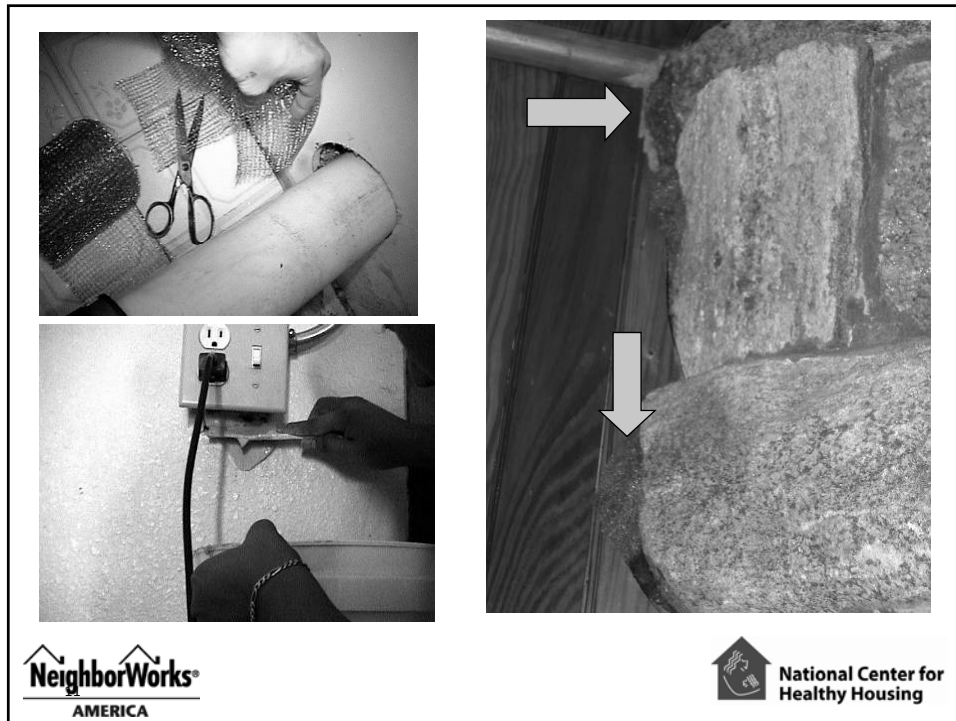
Some state or regional registries



## Pest Control

- No Spray & Fogging for roaches & mice
- Monitoring pest populations & complaints
- Reduce asthma triggers
- Cost savings over time
  - VA Study cockroaches
  - Yr 1: \$26 vs. \$11
  - Yr 2: 60% decline monthly costs/unit -- \$.87 vs. \$1.52
  - Pesticide use cut 50%





## What you will gain

IPM will give you...

- **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.

## IPM Case Study

- Lehman Village Houses (LVH)
  - East Harlem Public Housing (600 apts)
- GOAL: Reduce amount and severity of asthma
  - Asthma worsened by roaches and rodents in building
  - Antigens (microscopic parts of roach bodies, rodent skin, urine or saliva) cause allergic disease, including some forms of asthma



## LVH - Why IPM?

- Traditional pest control methods (carbamates, organophosphates, pyrethrins) are harmful to children
- As asthma cases increase, off-the-shelf pesticide use increases (fine mists hazardous)



## LVH - IPM Elements

- Hired, trained, paid team of residents
- Inspected structure and apartments
- Cleaning: HEPA vacuumed wall cavities, floors, cabinets; cleaned roach droppings & kitchens
- Exclusion: Filled, caulked, sealed cracks & holes
- Pesticides: Roach bait stations, boric acid, mice traps
- Monitoring: Roach sticky traps
- Tenant Education: Provided free, sealing trash cans, tupperware, and “green” cleaning supplies

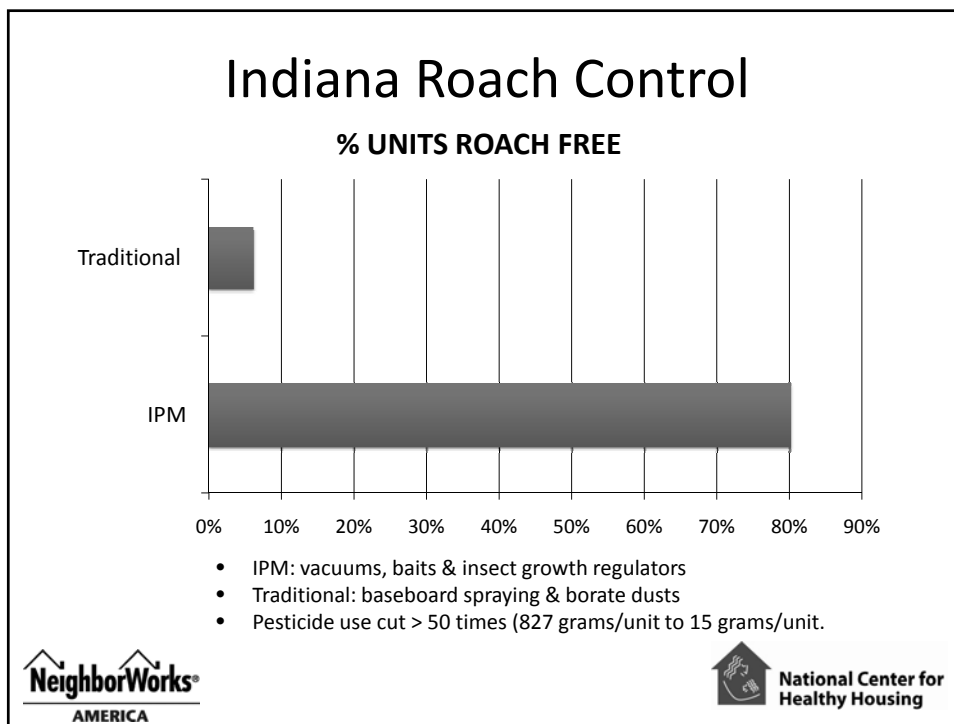




## LVH – IPM Results

- Roaches reduced in 73% apts
- 46% reported mice problems gone
- In control building, no change (Ficam Plus, carbamate with pyrethrin)







- ### IPM Resources
- HUD's M2M Green Program [www.oahp.net](http://www.oahp.net)
  - NCHH [www.nchh.org](http://www.nchh.org)
  - Asthma Regional Council  
[www.asthmaregionalcouncil.org](http://www.asthmaregionalcouncil.org)
-  

## What is a bed bug?

- A blood-sucking insect
- Most active at night
- Do not transmit disease, but:
  - cause secondary infections after people scratch their bites;
  - result in stress, loss of work, loss of sleep, and financial burden;



**Adult bed bug feeding on a human**



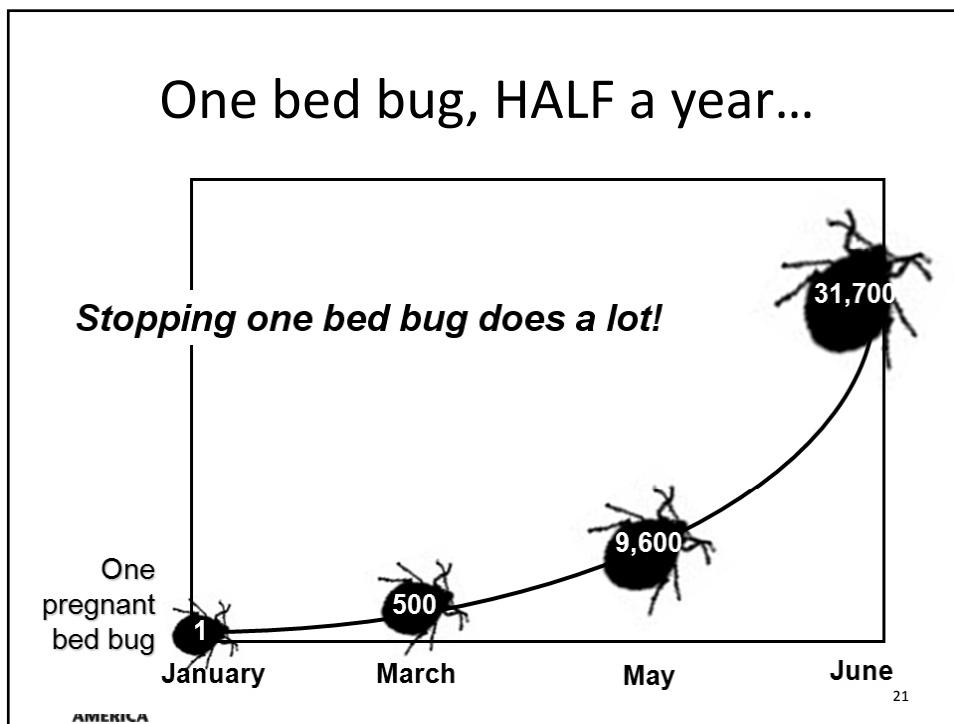
## Bed bug behavior

- Hide in cracks and crevices, often in groups.
- Cannot fly, jump, or burrow into skin...they crawl.
- Hitchhike on bags, furniture, wires, or pipes.




**Bed bug crawling into a screw hole to hide.**






## Blood spots

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

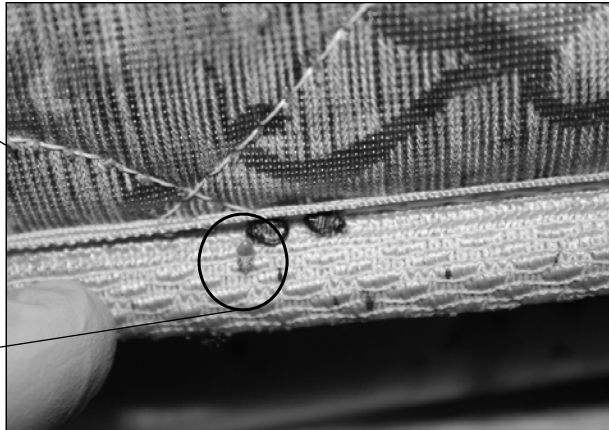
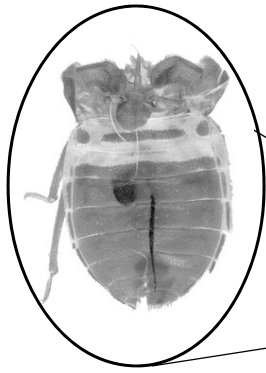


**NeighborWorks** AMERICA  
A bad infestation



**National Center for Healthy Housing**  
The start of an infestation

## Shed skins

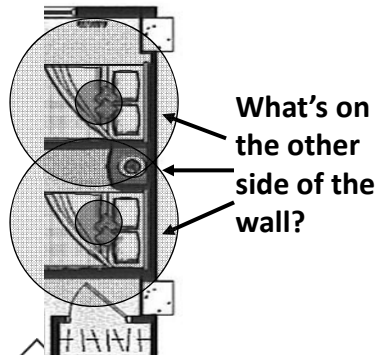


Bed bug signs on a mattress seam



## How do bed bugs spread?

- Through walls along wires and pipes
- On anything coming from an infested unit (furniture, backpacks, laundry...)



## Got bed bugs? Now what?

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

The first responses should be to:

- Report the problem
- Not throw the mattress out—cover it
- Not spray—leave this to the PMP
- Prevent carrying the bed bugs to other places
- Prepare the unit for the PMP



## Managing bed bugs reduces other pests

- Encasing mattresses, vacuuming, and washing bedding will help manage dust mites. (Dust mite frass is the most common cause of asthma.)
- Trap live bed bugs inside. Zip, seal, and check for rips. Leave it on for 1-1/2 years (don't let it rip).
- Keeping sleeping areas clutter-free gets rid of mouse and cockroach hiding spots.



**Mattresses and furniture  
don't have to be thrown out!**



## Management's role

- Explain situation to IPM professional and find out the unit prep requirements.
- Have the professional inspect and treat units adjacent to the infested one.
- Empty dumpsters weekly
- Remove furniture left for trash so it can't be reused
- Inspect the laundry room weekly



## The IPM Professional might

- Inspect
- Take apart furniture
- Put infested items in sealed plastic bags or discard heavily infested items
- Use
  - A vacuum
  - Heat or steam
  - Pesticides



## The resident's role

- Inspect regularly
- Launder bedding regularly
- Report bed bug sightings immediately and seek help from staff
- Use plastic bags when transporting infested items
- Don't bring home furniture found on the street
- Follow preparation instructions from the PMP



## Contaminant Priorities & Health Issues

- Lead and Lead-Based Paint – learning difficulties, neurological problems
- Environmental Tobacco Smoke – lung cancer, heart problems, SIDS
- Asbestos – cancer, mesothelioma..
- Volatile Organic Compounds (VOCs) – breathing issues, allergic reactions, headaches
- Radon – lung cancer



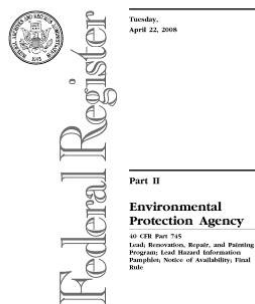
## Repairing Paint – New Federal Requirements

- What properties and activities are covered?
- Is there a way out of the rule?
- Should you become a “certified renovation firm”?
- Next steps



## Basics of RRP Rule

- Effective April 22, 2010
- Applies to pre-1978:
  - Target Housing (same as disclosure rule)
  - Child-occupied facilities
- Triggers:
  - Compensation
  - Paint disturbance (a/k/a renovation) >
- 40 CFR 745.80 to 745.91
- April 22, 2008 *Federal Register*



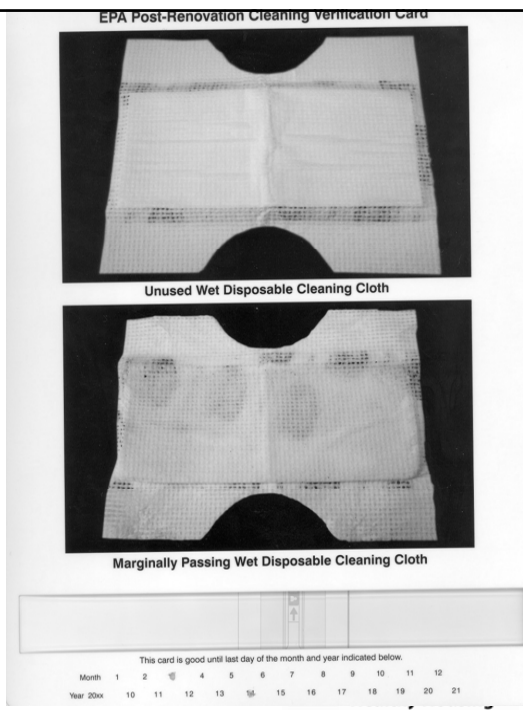


## So What Will Change?

- “Certified Renovation Firm” Disturbs Paint
  - EPA or State Certification (after 10/22/09)
  - Fees and five-year renewal
- “Certified Renovators” Supervise Work
  - One-day training (after 4/22/09)
  - Five-year renewal
- Mandatory Work Practices
  - Isolate work area
  - Contain dust
  - Thoroughly clean-up work area for debris and dust
- Post-renovation Cleaning Verification
- Documentation!



- Cleaning verification card



## Major Exclusions

- Houses built in 1978 or later
- Not target housing or child-occupied facility
- Risk assessor or lead inspector has determined where lead-based paint is present and you avoid it
- Perform only minor repair and maintenance work
  - =< 6 ft<sup>2</sup> painted surface/ room interior activities, or
  - =< 20 ft<sup>2</sup> painted surface for exterior activities
- Do-it-yourself – no compensation
  - Realistically only applies if tenant does work on tenant's unit.
- Owner-occupied and no children and no pregnant women live there



## Do You Have Lead-Based Paint?

Age	Percent of Housing Units <sup>1</sup> Without Lead-based Paint <sup>2</sup>		
	Interior	Exterior	Anywhere
Before 1940	21%	28%	13%
1940 to 1959	54%	41%	31%
1960 to 1977	84%	87%	76%
1978 to 1998 <sup>3</sup>	96%	97%	93%

1. Housing units includes rental and owner-occupied housing
2. Lead-based paint is paint with more than 1 mg of lead per square centimeter
3. Housing built after January 1, 1978 not covered by rule



## Next Steps to Consider

- Consider lead inspection especially for property built between 1960 & 1978
- Send maintenance supervisor to Certified Renovator Training after April 22, 2009 – 1 day class
- Review pre-renovation notification compliance
- Shift to new work practices
- Prepare key contractors
- Update work order system



## Smoke Free Policies Health Concerns

- Surgeon General says there is NO safe level of exposure. SHS is a Group A carcinogen– a substance known to cause cancer in humans for which there is no safe level of exposure.
- No ventilation system is effective in removal of toxins ~ up to 65% air exchange between units.

U.S. Surgeon General report, June 2006, Center for Energy & Environment, 2004.

Source: Smoke-Free Housing New England



## Secondhand Smoke is Deadly

- Secondhand smoke is the third leading cause of preventable death in US, killing 53,000 nonsmokers/year. For every 8 smokers one non smoker is killed.
- Children exposed to secondhand smoke are 44% more likely to suffer from asthma.
- Exposures increases the risk of SIDS.
- 7.3% of persons 65 and older smoke, 70% report a desire to quit.

U.S. Surgeon General report issued June 2006, ARC Report 2006, PTM 2006

Source: Smoke-Free Housing New England



## Tenants Want Smoke Free

- 78% of Maine tenants surveyed prefer smoke free environments.
- Washington State- nearly 70% of renters very interested or interested in living in smoke-free housing (2003)
- Los Angeles-Telephone survey 69% favor requiring all apartment buildings to offer nonsmoking sections (2004).
- Oregon- Portland metro-area survey -- 75% of renters say they would choose a smoke-free rental, "other things being equal".

Source: Smoke-Free Housing New England



## Why Should Owners Care

- Possibly save on property-casualty insurance – e.g., 10%
- Larger share of the market want smoke-free housing
- Reduce liability
- Reduce operating costs

Source: Smoke-Free Housing New England



## What Owners & HUD Say?

- Guardian Management- Nearly 3/4 of all residents were happy or very happy with the no-smoking rule. Among smokers, 43% reported smoking less tobacco since the policy's implementation
- Avesta Housing – largest affordable owner/manager in Maine. We were concerned but in our 1300 units only 3 residents have left and 85% want smoke free housing now
- HUD Guidance (6/2009) strongly encourages public housing authorities to go Smoke Free


Source: Smoke-Free Housing New England



## Smoke Free Saves \$\$

The Monetary Impact			
Cost to Rehabilitate a Unit Where Smoking is Prohibited vs. a Unit Where Smoking is Allowed			
	Non-Smoking	Light Smoking	Heavy Smoking
General Cleaning	\$240	\$500	\$720
Paint	\$170	\$225	\$480
Flooring	\$50	\$950	\$1,425
Appliances	\$60	\$75	\$490
Bathroom	\$40	\$60	\$400
<b>TOTAL</b>	<b>\$560</b>	<b>\$1,810</b>	<b>\$3,515</b>

Data reflects surveys from housing authorities and subsidized housing facilities in New England.  
Collected and reported by Smoke-Free Housing New England, 2009.

Source: Smoke Free New England Free Housing New  
 NeighborWorks  
 AMERICA



## What are the steps involved in adopting a smoke-free policy?

1. Make a plan. Start by creating a plan to make the entire residence smoke-free.
2. Hold a Meeting. Gather with tenants to discuss. There may be resistance, but non-smoking tenants have rights under their leases, too.
3. Inform Tenants. Review the legal information concerning your rights and your tenants' rights.
4. Amend New Leases. Change the language of your lease to include your new smoke-free policy. When new tenants sign on, your policy will be crystal clear.
5. Promote Your Status. Begin advertising your smoke-free status to gain new tenants who appreciate a clean air environment.

Smoke-Free Housing  
 Works  
 New England  
 CA

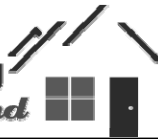



## What about Grandfathering?

- If tenants are grandfathered, people are still being exposed to secondhand smoke.
- Grandfathering clauses are meant to help transition current, smoking tenants into the policy, not as a permanent provision of the smoke-free policy.
- Limit grandfathering to 6 to 12 months.
- When leases are renewed, all tenants, should follow the smoke-free policy for the health, and benefit, of all parties.

**Smoke-Free Housing**  
 orWorks®  
 ERICA

*New England*



National Center for  
Healthy Housing

## What about enforcement?

- Pre-policy anxiety is much worse than reality.
- Tenants want this! They will be the enforcers.
- People are used to 'taking it outside.'
- If non-smoking is included as a lease provision, you may evict based on a violation of the clause. There have been at least eight cases in Maine that have included smoking as a lease violation and related civil cases in Massachusetts and California.

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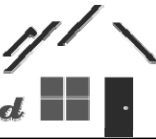


National Center for  
Healthy Housing

REMEMBER...

It's about the smoke, not  
the smoker!

**Smoke-Free Housing**  
*New England*



National Center for  
Healthy Housing



**Avesta Housing's Smoke Free Portfolio Status**

Communities located in York and Cumberland county

1,443 units over 55 communities

- In 2006, 32 units were smoke-free or 2%
- In 2007, 116 units were smoke-free or 8%
- Currently, 1,141 units are smoke-free or 79%
- By 2010, we expect 100% smoke-free apartments

**NeighborWorks**  
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## Volatile Organic Compounds

- Air Fresheners
- Cleaning Products
- Sprays & Coatings
- Formaldehyde
- Carpets
- Vinyl Floors
- Drywall
- Hobbies
- Home Maintenance



## Volatile Organic Compounds

EPA found concentration of VOC's to be 2-5 times greater in the home.

During or immediately after paint stripping activities, VOC levels can be 1,000 times higher than outdoors.



How can we reduce contaminants?  
Which jobs and tasks?



## Opportunities to Reduce Contaminants

- Green Cleaning
- Product Specifications
  - Cabinets
  - Paints & coating
  - Flooring



## Why Green Cleaning?

- Custodial staff at risk - 6 out of 100 professional janitors are injured by chemicals, particularly **disinfectants** (very toxic)
  - Headaches
  - Breathing toxic fumes, asthma
  - Burns
  - Eye and organ damage
  - Cancer



## Why Green Cleaning?

- Conventional cleaning chemicals - made predominantly from petroleum products (non-renewable)
- Most janitorial paper products made from virgin tree fiber
  - Cut 25 to 35 million trees per year
- Old janitorial equipment sent to landfill (vacuum cleaners, floor buffers)
  - 500 million pounds per year = 10,000 garbage trucks



## Why Green Cleaning?

- Reduces exposures for residents
  - Reduced asthma and breathing triggers
  - Reduces risks of poisonings
  - Less harsh products – finishes can survive cleaning
- VOC's - contribute to smog formation
- Antimicrobial agents (i.e. hand soaps) can result in stronger microbe and bacteria formation



## Green Cleaning, Painting, and Flooring

### Cleaning

- GreenSeal or EcoLogo Products. Dfe products are not certified but reviewed.
- Supply microfiber wipes and mops. Use HEPA filtration vacuums.
- Purchase paper products that are either Green Seal certified or Forest Stewardship Council (FSC) certified.

### Painting

- GreenSeal certified or meet LEED for Homes VOC standards.
- Examples : Sherwin Williams Property Solutions and Benjamin Moore Eco Spec Waterborne.

### Flooring

- GreenLabel Plus Carpet (e.g., - Mohawk Everstrand Green Label Plus) or Florescore resilient flooring products (e.g., Armstrong Imperial Textures VCT).
- Smooth and cleanable flooring.
- Entryway mats /grates to capture dust and contaminants.



## Third-Party Certifications

- Buildings
  - Green Communities – [www.greencommunitiesonline.org](http://www.greencommunitiesonline.org)
  - Energy Star with Indoor Air Package – [www.energystar.gov](http://www.energystar.gov)
  - LEED for Homes – [www.usgbc.org/LEED/homes/](http://www.usgbc.org/LEED/homes/)
- Products and Services
  - Green Seal – [www.greenseal.org](http://www.greenseal.org)
  - EcoLogo - [www.ecologo.org](http://www.ecologo.org)
  - EPA's Design for the Environment – [www.epa.gov/dfe](http://www.epa.gov/dfe)
  - GreenShield Certified (for pest control) – [www.greenshieldcertified.org](http://www.greenshieldcertified.org)

