Oh no, bugs!
Understanding Infestation

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Disclaimers

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Tenant’s rights free services:
  • TURN: Tenant Union Representative Network (215) 940-3900
  • CLS: Community Legal Services (215) 981-3798
Sources

- Based on Peer-reviewed literature (Citation Date)
- Available on request:
  - Complete Bibliography
  - Research Papers
  - Protocols
  - Educational materials
  - Website resources
- Constantly updated

What’s a pest?

“Any destructive or troublesome organism”

- Affect public health
- Destroy food or property
- Create a nuisance

Something we don’t like, where we don’t want it!

Rodent-chewed wire – fire hazard!

Mice nesting – wherever!
What do they do to us?

- Pests cause allergies & can trigger asthma – also eczema, other allergies
  - Mice - 83% of all homes!
    - 95% low-income
    - 89% of schools!
  - Cockroaches – up to 63% of homes
- 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; Latino’s – 3x!
- Bite us – Lyme, West Nile, rabies
  - Thousands of rat bites each year in US!
- Infectious disease vectors

What do pests want?

- All pests want three things:
  1. Food
  2. Water
  3. Harborage
    - Someplace to hide & nest
    - Ideally: warm
What is an infestation?

• The state of being invaded or overrun by pests or parasites
• The actual organisms living on or in the host habitat
• More than one bug!
• Usually a colony capable of reproducing

Bed bug aggregation on mattress seam
Photo: Dion Lerman

Standardized Assessment

<table>
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<th>Level</th>
<th>Bed Bugs</th>
<th>Cockroaches</th>
<th>Mice</th>
<th>Rats</th>
</tr>
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<tbody>
<tr>
<td>None</td>
<td>0</td>
<td>0</td>
<td>No sign</td>
<td>No sign</td>
</tr>
<tr>
<td>Low</td>
<td>1-10</td>
<td>1-10</td>
<td>1</td>
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<td>11-99</td>
<td>2-3</td>
<td>2-9</td>
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<tr>
<td>Extreme</td>
<td>&gt;1000</td>
<td>&gt;1000</td>
<td>20</td>
<td>&gt;100</td>
</tr>
</tbody>
</table>

Base treatment protocol on assessment!
How they get in?

• Find out! Do a thorough inspection:
  o Outside of the house
  o Inside: corners, floors, closets & basement
  o Where have you seen them?

• Identify the pests found!
  o Online
  o Experienced pest control workers
  o Urban entomologist
    • IPM/Penn State Extension
    • 215-264-0582

Where do they hide?

- Where do you see the creature?
  • Creature droppings
  • Nests and burrows
- Good food & source of water
  • Under sinks, kitchens, garbage cans
- Hidden places
  • Inside walls, cabinets, basements, attics, waste bins, baseboards
- Warm cavities for insects
  • Inside TV’s, computers, smoke alarms
- Near entry holes
  • Spotted during outside inspection
- Where people sleep – bed bugs
  • Wheelchairs
Clutter Image Rating: Living Room

Please select the photo below that most accurately reflects the amount of clutter in your room.

CIRS - What 4 looks like...

- All surfaces covered
- Floor covered
- Limited access
- Plies to window height, or above
- Loose debris
- Inappropriate objects (e.g., piles of clothes in LR)
Inspection Checklist

• General health, sanitation & safety
How do you get rid of them?

- Prevent them!
  - Keep ‘em out!
- Sanitation
  - Clean & de-clutter
  - Eliminate food & water
- Physical controls
  - Identify them!
  - Chemical controls
    - By licensed pros only!
- Ongoing monitoring

Hoarded homes make pest control challenging!

- Harm reduction
- Safety days
- Make home safe enough
- Home functional, not home beautiful
- Resident driven
- Reduce, recycle
- Containerize
Hoarding Prevalence

- Hoarding behaviors affect between 2 - 5% of the population.
  - The 5% rate is 2x the rate of OCD & 4x the rate of bipolar and schizophrenia.
- In Philadelphia: **23,600-59,000** adults.
  - Hoarding behaviors usually start in adolescence and often increase with age.
- **92% of individuals with Hoarding Disorder have a co-occurring disorder**
  - Depression; Social phobias; Anxiety
  - Substance abuse

Engagement

**Remember these guidelines:**

- Don’t gasp!
- Don’t touch!
- Evaluate for safety
- Find something to compliment
- Be grateful & nonjudgmental
- Build trust!
- Be cautious of verbal cues
- Ask questions
Effective Inspection & Treatment Guidelines

• Need to be able to see & access base boards & corners, including in closets.
• Clear under beds
• Containerize stuff in clear plastic bins with tight-fitting lids – stack & move
• CIRS: <3! At edges...

Assessment based pest control

• Conduct inspection – 2 week intervals
• Estimate population
• Develop treatment protocol
• Apply
• Reinspect & retreat
• Continue until no signs of activity for 6 weeks
How???

• MCO’s now Reimbursing IPM for Medicaid/care
  o Bed bugs
  o Roaches & rodents
  o Maybe not other pests
• Effective January 1, 2019 in SE PA
• PA IPM working with MCO/s & DHS to define
• Probably not fully rolled out until September
  o Provider must be certified Medicaid provider
  o Service Coordinator at MCO approves

Don’t use sprays or foggers!

• They will ruin the bait
• They may trigger asthma attacks
• They may have other health effects
• Children are most at risk
• Foggers can also explode!
• They don’t solve the pest problem
Only licensed professionals may apply pesticide in someone else’s home!

Not staff, maintenance, or volunteers… It’s the law!

Using cockroach bait stations

- Clean up! No other food for the roaches! No hiding places!
- Stick bait ‘pucks’ near where the roaches were living
- Use gels in cracks & crevasses
- Leave until empty, then throw out ‘puck’
- Only use them when you have roaches!
  - Pro or resident placement!
How do you control mice?

- Get rid of all food & water
  - Keep garbage cans covered
- Seal openings bigger than a pencil width!
  - Stuff hole or crack with copper mesh or wool
  - Seal with silicone caulk, spray foam, spackle or cement
  - Sheet metal or screen for outside
- Use snap traps
  - Don’t use poison in homes!

Want to make sure pests stay away?

- Don’t feed or water them!
- Do keep doors, screens and repairs in good shape
- Use monitors: leave in place & check weekly
  - For insects & mice – sticky traps
  - For mice & rats – snap traps
  - Bed bugs – interceptors
- If you don’t have new pests –
  - Celebrate & keep on!
- If you find pests, treat again
  - If roach baits did not seem to work, try a different brand
  - Make sure there is no “competing” food source!
Bed bugs – Don’t Panic!!

- You can see them.
- Bed bugs can be avoided and controlled!
- Not every bite or skin irritation is a bed bug!
- They do not cause or spread diseases.
- Tell your property owner and get treatment quickly!
- Simple heat and/or steam can kill them.
- Don’t use sprays or foggers
Identifying Bed Bugs

- Detailed ID
- All 3 stages

NYC Department of Health & Mental Hygiene, 2001

Bed bug life cycle

- Nymph to adult – must feed
- Poppy to apple-seed size
- 6-12 eggs laid @ 2-3 days – 400+ lifetime
  - 1 mm long = 1/26", sticky
  - Eggs pesticide resistant
- Nymphs hatch out in 6-10 days
  - Must have blood meal to grow
  - 30+ days to maturity
- 70% of infestation juveniles – small!
  - Only adults have gender
How do you control Bed Bug? Early detection!

- Education
  - Staff
  - Residents + Survey
- Inspection
  - Brief visual – no disassembly
  - Placement of monitors/interceptors
- Treatment
  - Encasements
  - Laundering
  - Vacuum & steaming
  - Dust & Dual-AI product (BUT: rotate class!)
- Re-inspect/re-treat
  - 14 day interval – at least twice
  - Until no further activity observed for 6 wks

(Cooper, 2015)

Treatment

Non-chemical
- Vacuum
- Steam
- Hot boxes; clothes dryer

Chemical
- Dusts – DE, silica gel, CimeXa
- Liquids – PMP’s only!
- Biopesticide - Aprehend
Why do you choose your cleaning products?

- Habit
- Brand loyalty
- Cost
- Effectiveness
- Convenience
- Novelty
- ?Safety?

Health Hazards of Cleaners, Sanitizers & Disinfectants

- The words “natural,” “nontoxic,” & “green” on product labels are unregulated by the government.
- Cleaning products do not have to list ingredients on the label & manufacturers do not have to prove they are safe before marketing them.
- Products labeled “green” may have as many toxic chemicals as conventional cleaning products.
Asthma and Asthmagens

Many cleaning, sanitizing, & disinfecting products can irritate the lungs and trigger or even cause asthma.

Common Asthmagens:

- Ammonia
- Bleach (respiratory irritant)
- Fragrance ingredients
- Certain disinfectant ingredients
- Volatile organic compounds (VOCs)

https://www.ewg.org

For instance...

https://www.ewg.org
Safer Choices

Cleaners & Air Fresheners

✓ Third Party Certified products
✓ “Caution” signal word
✓ Non-aerosol
✓ Fragrance-free & dye-free
✓ All ingredients listed on label
✓ No overwhelming odor
✓ Open the windows
✓ Exhaust to outdoors

“Clean” does not have a scent to it.

Third Party Certification

• Many selections of institutional/industrial cleaning products.
• EPA “Safer Choice” for retail product – but not audited; allows fragrances.
• Some programs are forming buying clubs to purchase safer institutional products at better prices, or they’re purchasing through local schools
Resources

- NPMA Best Management Practices
  - www.bedbugbmps.org
  - NPMA Bed Bug Basics Training: http://pestworld.learningzen.com
- BedBugCentral
- Dini Miller’s Recommendations
- Early Detection for Multi-family Housing
- Shelters & Group Living

References

- Centers for Disease Control & Prevention (CDC)
  - www.cdc.gov
- PA Department of Health
  - http://www.health.pa.gov/My%20Health/School%20Health/Pages/Quick%20Links/Environmental/Pests.aspx?ID=WYs3aVGGoNPY
- PA IPM Program
  - http://extension.psu.edu/pests/ipm
- Penn State Extension
  - http://extension.psu.edu/pests/ipm/pestproblemsolver
- Stop Pests in Housing
  - http://www.stoppests.org/