



**Indiana**  
**Department**  
**of**  
**Health**

# Bed Bugs in Outpatient Facilities

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OUR MISSION:

**To promote, protect, and improve  
the health and safety of all Hoosiers.**

OUR VISION:

**Every Hoosier reaches optimal health  
regardless of where they live, learn,  
work, or play.**



# Bed Bug Action Plan for OP Facilities

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- **Educate Patient and Staff**
- ID and Response
- Client Inspections
- Cover Chairs/Inspect daily
- Utilize Monitors
- Limit Personal Belongings
- Gown Patient/Clothing Education
- Isolate
- Heating Box
- Regular inspections
  - Waiting room, common areas, laundry rooms, equipment (wheelchairs)
- Limited Treatment
- Staff Protection

# Educating Staff

- Dealing with bed bugs is now a part of the job.
- Blood suckers, but not as threatening as mosquitoes or ticks
- Schedule a training program for staff.
- Be able to engage in open dialogue with patients.





Mental

Physical

Well-being is impacted by lack of sleep; social stigma; potential risks from misused pesticides; and costs of treatment.

As bed bugs infestations spread to more people, these impacts affect the health of entire communities.

Societal

Economic

Bed Bugs are a Public Health Pest



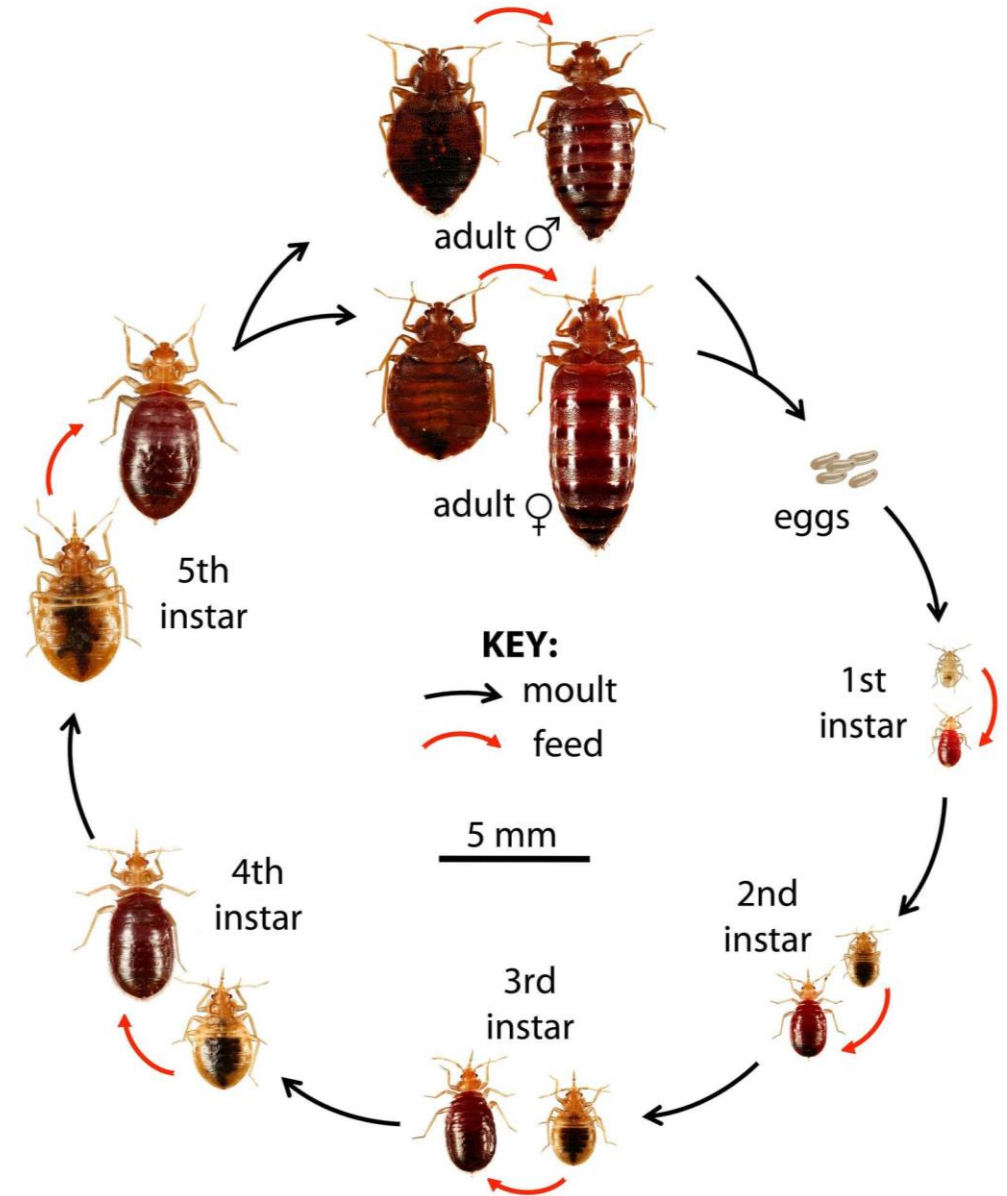
# Bed Bug Biology

- True Bug
  - 6 legs, piercing mouthparts
  - Family of blood feeding insects
- Adults 3-4 mm in length
- Common worldwide
- Simple metamorphosis: egg, nymphs, adult
- Crack/crevice harborage; furniture, bedding



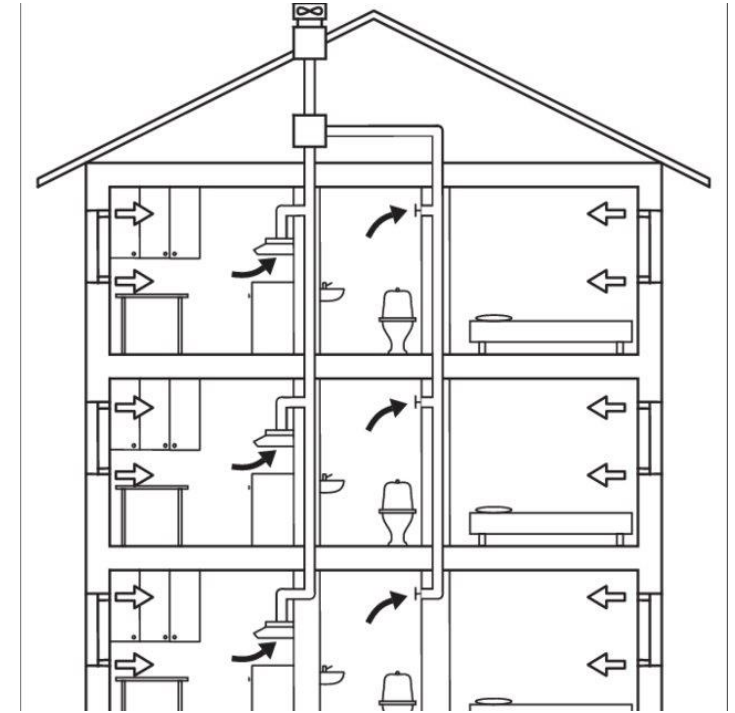
# Bed Bug Biology

- Both males and females feed on blood
- Peak feeding time before dawn
  - adaptable
- Take blood meal every 5-10 days
- May survive 18 months without blood meal
- May feed on non-human hosts
- Lay 2-3 eggs daily, glued in place (250/lifetime)



# Bed Bug Biology

- Introduced via luggage, furniture, bedding  
-2008
- Resurgence as a result of increased travel and changes in cockroach treatment techniques
- May move to adjacent rooms/units to feed





# Mahogany Flats



# Fed Bed Bug



CDC

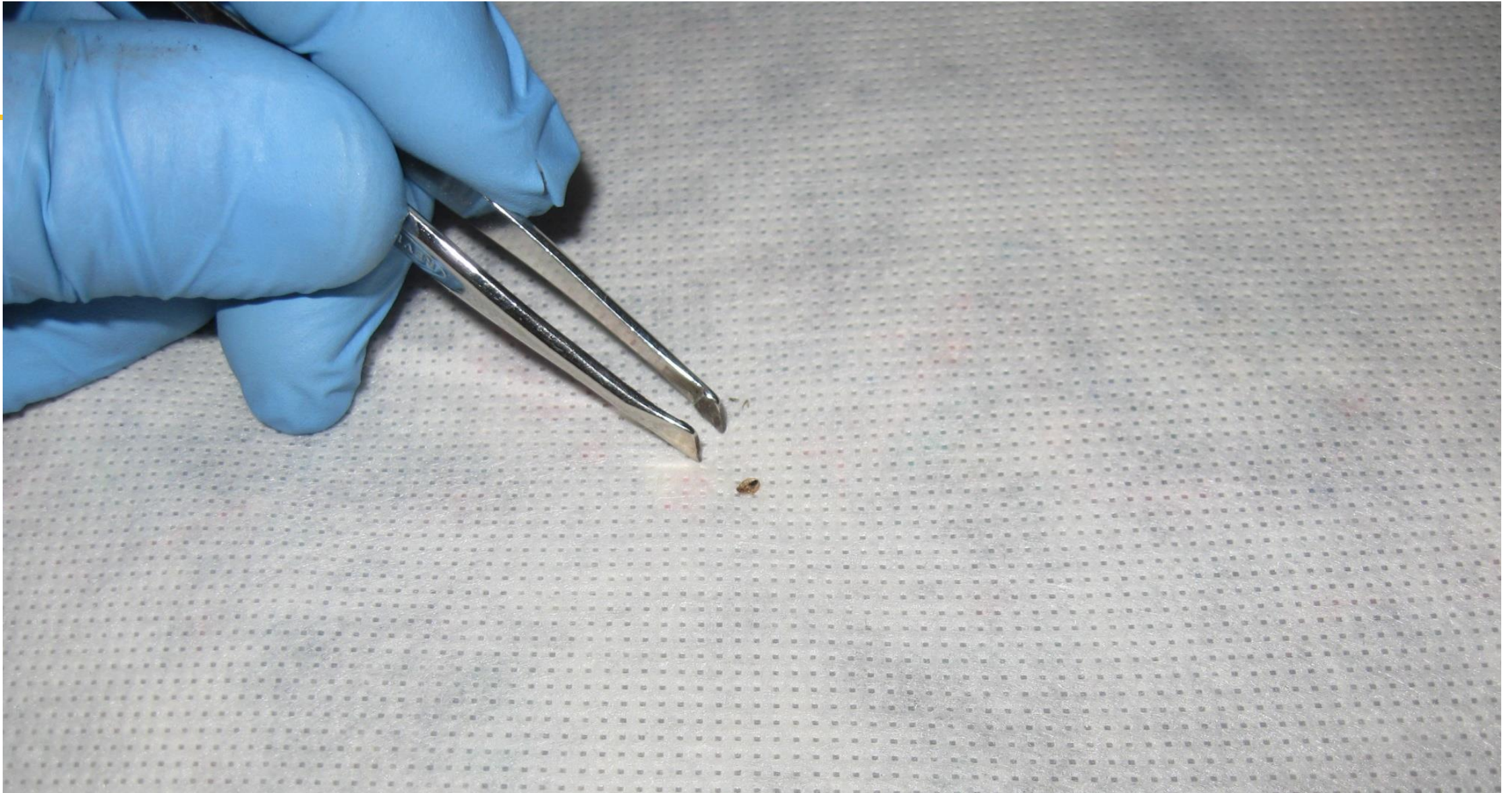
# Eggs, Nymphs and Adults



University of New Hampshire



LG, IDOH





# Size and Identification



# Medical Symptoms

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- Bites in rows of three
- Welts, Itchiness, Swelling
- Inflammation, sensitivity over time
- Anxiety, Annoyance, Insomnia, entomophobia
- Overuse of skin care/pesticide products

**Fortunately, there is no disease threat  
From bed bug infestation**

# Bed Bug Research





# Immediate Bite Reaction



# Delayed Reaction (>24 hours)

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# Extensive Bite Reactions



# Signs of an Infestation

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- Fecal spots
- Exuviae (shed skins) in cracks and crevices
- Blood spots on bedding
- Sweet, musty “bug” smell in heavy infestations
- Appearance of the bugs themselves



# Fecal Spots



# Adults, Nymphs and Exuviae



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# Fecal spots and bed bugs in box spring



# Overlooked Spot



copyright, 2004 M. Potter University of Kentucky



# Other Hiding Spots



Photo by B. Ogg, UNL Extension in Lancaster County



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# Habitat and Harborage Areas

- Crevices behind mouldings
- Curtain folds
- Behind picture frames
- Joints in bed-frames, furniture
- Behind loose wallpaper
- Behind paneling or joinery
- Mattress seams
- Pillows
- Electrical outlets
- Inside equipment



# Identification and Response

- Know how to visually identify bed bugs.
- Have a written bed bug action plan.
- Discuss protocol with patient for bed bug prevention.
  - Freshly laundered clothing for repeat visitors.



# Client Inspections

- Inspect patients when entering facility.
- Encourage them to share if dealing with bed bugs at home.
- Remove bed bugs with lint roller
  - Belt, collar, and catheter area.



Morgan Wilson, Virginia Tech

# Cover Chairs/Inspect Daily

- Cover chair/table with white paper to easily identify bed bugs.
- Inspect chairs/equipment daily.



Octoclean

# Utilize Monitors

- Place monitors around facility to determine if bed bug infestation is present in facility.
  - Place in both treatment areas and waiting areas.
- Bugs that are captured can be evaluated.



# Limit Personal Belongings

- Limit items to be brought into facility.



# Gown/Clothing Education

- Remove and isolate clothing during visit
- Bed bug-free clothing and shoes during visits.





# Isolate

- Use designated “bed bug” chair/exam room for suspected infested patients.
  - End of floor.
  - Extra traps in vicinity



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Changlu Wang NJAES

# Heating Box

- Consider investing in heating box for facility.
- 120°F
  - Wheelchairs, belongings
  - Facility equipment and furniture.



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# Regular Professional Inspections

- Schedule regular PMP inspections.
- Waiting rooms, visitor lounges, common areas, laundry rooms, treatment rooms, and equipment.
- Follow your PMP inspector to ensure that all at risk locations are inspected.



# Limited Staff Treatment

- 91% isopropyl alcohol
- Sterifab®
- Dusts?



# Staff Protection

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- Washer and Dryer is your best friend!
- Keep work uniforms as simple as possible.



# Keep your vehicle clean and vacuum weekly



Photo: <http://insider.foxnews.com/2015/04/16/cops-man-set-rental-car-ablaze-while-trying-kill-bed-bugs>

# Questions?

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