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BED BUGS GO TO SCHOOL AN IPM APPROACH

Bedbugs, *Cimex lectularius*, are soft-bodied, flat-shaped, brown to rusty-red colored insects. Like fleas, ticks, head lice and mosquitoes, bed bugs feed on blood. Similar to mosquitoes, bed bug abdomens swell and become brighter red as they feed. Bed bugs can survive for months without feeding. Unlike fleas, ticks and mosquitoes, bed bugs are not known to transmit disease. Bites are often painless initially but may become large, itchy welts. Although bed bugs are most often found associated with locations where humans sleep, they are expert hitch-hikers, and may be inadvertently transported on clothing, back-packs, or other belongings to child care facilities, schools and other places.

Bed bugs, eggs and bug feces on a denim jacket.

Bed bugs are most active at night, often sheltering during the day within twenty feet of beds. Bed bug eggs, immature nymphal stages and adults can all be found together in bed frames, seams of mattresses and box springs, and under and behind other furnishings. Bed bugs excrete digested blood which appears as dark spots or smears in these same locations.

Bed bugs typically arrive in schools as stowaways on student or staff belongings. In at least one major urban school district, one or more confirmed specimens are typically found each month. Schools generally do not experience established, reproducing infestations unless students and/or staff reside at the school, or the school shares space with facilities where humans sleep at night. Bed bug eggs do not necessarily indicate a reproducing population; they may result from a gravid female transported into the school by a student, staff member or visitor.

When a bed bug is found, it can be difficult to determine the source. A bed bug found on a person or belongings may have come from another person. Similar to head lice, it is very important to address the issue with care and sensitivity. There is no association between cleanliness, and bed bug infestations. Anyone can experience an infestation.

If a suspected bed bug is found in school, it should be collected for identification by a trained professional. Other bed bug-like species may be found in schools, including bat bugs or swallow bugs. To collect the specimen, use a piece of tissue, or forceps to place the bug in a plastic bag, double bag, then tape the outer bag closed. Do not crush the specimen. If the specimen will not be identified immediately, place the bag in a freezer for several hours to kill the bed bug and prevent escape. Do not mail or transport live specimens they are skilled escape artists.

Collect the following information for each specimen: date found, name and contact information person collecting specimen, location found (e.g., on a student, on student's belongings or on walls or furniture), room number, school name, school principal name and phone number.

If the specimen is confirmed to be a bed bug, the principal and school health professional should be notified and the following steps are recommended:

1. The classroom or other area where the bed bug was found should be carefully inspected by a trained professional including desks, floors, walls and storage areas for student belongings. A thorough cleaning may be needed including vacuuming with special attention to cracks and crevices in furniture and equipment, walls and floors, and laundering washables in hot water and drying on the highest heat setting. Delicate fabrics can be soaked in warm water and laundry soap for several hours before rinsing. Infested items that cannot be cleaned or treated with high heat (>120F for several hours) should be

disposed of. If necessary, a licensed pest management professional can treat infested areas with pesticides labeled for bed bugs.

2. If the bed bug was found on a student's clothing or other belongings guardian(s) should be notified. **There is no need to send the student home.** Similar to head lice, the school health professional should manage the case including re-inspecting belongings, desk, classroom, etc. until the problem is resolved. Student belongings such as backpacks can be isolated in tight-sealing plastic containers or bags to reduce potential for bed bug dispersal, both at home and in school while the problem is being resolved.

3. Parents of all children using the room where the bed bug was found should also be notified and provided with basic information about bed bugs including description, signs and symptoms, strategies to monitor for and eliminate infestations in homes including cleaning, laundering and specially designed mattress and box-spring covers that can entrap bed bugs and reduce harborage opportunities. The information should include where to go for additional help.

In the home environment the common bed bug will feed on a variety of animals but prefers humans, so pets such as dogs and cats are not a major host for bed bugs. Bed bugs feed for about ten to fifteen minutes at night, then drop off the host and crawl to a sheltered crevice where they'll remain for a few days while digesting the meal. They will bite all over the body, especially on exposed areas, such as the face, neck, arms, and hands.

People experience a range of reactions to the bites; some are unaware, while others experience an allergic reaction to the saliva injected while the insects feed, and may develop painful welts. Repeated bites tend to generate more severe reactions and heavy infestations of bed bugs may cause anemia in children and the elderly. Bed bug problems in the home may also cause stress, financial hardship, and sleeplessness. Because they can survive for almost a year without feeding, bed bug infestations can persist in abandoned buildings or those that are only used seasonally.

Don't let the bed bugs!

Inspect and monitor classrooms. If specimens are confirmed, inspect crevices in baseboards, pictures, furniture, window, and door casings, wallpaper, behind electrical switch plates, in telephones, radios, clocks, behind wall mounted art-work. Look for the insects, their cast skins, bug poop, and eggs near crevices.

- Schools are not ideal places for bed bugs as they prefer to hide during the day and few people are around during the night. However, hungry bed bugs will feed during the day.
- Evening school staff on-break in rest areas may be the first to notice regular bites.
- Faculty lounge, office area or nurses office with upholstered furniture or a cot may become infested. Similarly schools that have child care facilities with stationary bedding are prone trouble spots.
- Schools with dormitories provide ideal habitat for populations to rapidly increase.

In nearly all cases, careful inspection, vacuuming, laundering and school health professional case management will be adequate to resolve a confirmed bed bug sighting in schools without space heat or steam treatment. Note: Bleach and ammonia are not effective against bed bugs. Soap and water is effective for removing bed bugs, eggs and debris from surfaces.

Managing bed bugs

- Inspect and monitor for bed bugs constantly, they arrive with people and their belongings. Inspect donations and monitor lost-and-found areas with extra vigilance.
- Vacuuming is an effective way to remove bed bugs and the dirt that provides them with shelter.
- Bed bugs are sensitive to extreme temperatures in all of their life-stages. So toss all infested clothing in a hot (140°F) dryer for 40 minutes.
- Eliminate shelter by sealing cracks and crevices with a silicone based sealant. Seal around utility conduits.
- Remove clutter.
- Separate student back-packs and coats. Most bed bugs in schools will be coming in with students and can be found on, and in the student's belongings.
- Encourage staff and faculty to report bed bug sightings.

Information taken from:

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