Recently, West Virginia and other states have seen an increased number of bed bug infestations plaguing residents. As bed bugs infest more and more homes, they may find their way into schools. When this happens, the school needs to take proactive action to prevent infestation and stop them from spreading in the school setting.

**What are bed bugs?**

Bed bugs are small, brownish, flattened insects that feed on the blood of people while they sleep. Although the bite does not hurt at the time, it may develop into an itchy welt similar to a mosquito bite. Bed bugs do not transmit disease, but they can cause significant itchiness, anxiety, and sleeplessness. Bed bug infestations are also very difficult and expensive to control.

Usually, bed bugs will hide during the day and only come out to feed during the night. Unlike head lice, they do not live on a person. However, they can hitchhike from one place to another in backpacks, clothing, luggage, books, and other items.

**Could my classroom be infested?**

Actual bed bug infestations in schools are uncommon. More commonly, a few bed bugs will hitchhike to school from an infested home by hiding in a student's clothing or backpack. Bed bugs that hitch a ride into the school in one student's backpack could be carried home by another student, making the school a potential hub for bed bug spread. This is not a minor concern - bed bugs are very expensive and difficult to eradicate.

If a school plans to use pesticides to control pests indoors, then they are required under West Virginia law to have an integrated pest management (IPM) plan in place. If a bed bug infestation is suspected or a number of students are getting bitten during class, the school should contact a licensed pest management professional for assistance.

This fact sheet has been published by the Michigan Bed Bug Working Group (Update May 2010).
What if I find a bed bug on a student?

If a bed bug is found on a student, it may indicate that the student has bed bugs at home. However, bed bugs can crawl onto or off of a person (or their belongings) at any time, so it is also possible that the bed bug was brought to school by someone else. If a suspected bed bug is found on a student or a student's belongings, the following procedures should be followed:

- The student should be discreetly removed from the classroom so that the school nurse or a qualified individual can examine the student’s clothing and other belongings. Any bugs found should be removed and collected for identification. Try to keep the specimens as intact as possible.
- If a confirmed bed bug was found on a student, then the school principal or nurse should contact the student's parents or guardian to inform them of the bed bug presence on their child. Consider sending a bed bug inspection form home, a sample is provided at the end of this document. Educational materials, such as those available at [http://www.epa.gov/bedbugs/](http://www.epa.gov/bedbugs/) should also be provided to the family.
- The school principal or nurse or center program director should consider notifying the affected class or classes. A sample notification letter is provided at the end of this document.
- Students should not be excluded from school due to bed bugs unless repeated efforts have been made to remedy an infestation. Schools should not be closed due to bed bug presence, if pest management is necessary it will normally be targeted to certain areas of the school.
- Ongoing pest management that includes the use of pesticides indoors should be overseen by the school IPM Coordinator and must conform to the school's integrated pest management plan, as required by West Virginia law (Legislative Rules Title 61 Series 12J).

What can I do to eliminate bed bugs from my classroom?

- DO NOT allow untrained, unlicensed staff to apply pesticides on school property. By law, only IPM certified applicators can apply pesticides (even ready-to-use products like sprays) in schools, and in compliance with WV IPM rules.
- Backpacks, lunchboxes, and other items that travel back and forth to school can also be inspected daily and sealed in plastic containers to prevent bed bugs from getting into them at home.
- Hard surfaces can be cleaned with standard cleaning products.
- If bed bugs have been found repeatedly in a particular classroom, have the room inspected by a pest management professional or other trained staff.
What if one of my students has an infestation at home?

When a student is dealing with an infestation at home, it is important to be sensitive to their problem. Although bed bugs have nothing to do with cleanliness or socioeconomic status, there is still a stigma that can come with having bed bugs. As a result, parents may be hesitant to admit to having bed bugs, and students may not want others to know they have an infestation at home. Students living in an infested home may also feel anxious or tired during the school day.

Schools should work with the parents of any student living in an infested home to develop strategies for preventing the further spread of bed bugs.

- Determine if the infested home is being treated. Home remedies and do-it-yourself treatments are usually insufficient and could cause negative health effects or produce potential hazards in the home.
- If a parent lacks the financial resources to hire a pest management professional, they can reference the online resources at: http://www.epa.gov/bedbugs/.
- In an infested home, parents should store their child’s freshly laundered clothing in sealed plastic bags until they are put on in the morning. This prevents bed bugs from hiding in the clothing and being carried to school.
- Backpacks, lunchboxes, and other items that travel back and forth to school can also be inspected daily and stored in sealed plastic containers at home to prevent bed bugs from getting into them.
- At school, the student could be provided with plastic bags or bins in which to store their belongings in order to prevent any bed bugs from spreading to other students’ belongings.
- If bed bugs are finding their way into the school, consider notifying the affected classes. A sample notification letter is provided at the end of this document.
- Continue to use these measures until successful treatment of the home has been verified.

Additional Resources

- EPA Bed Bug resources [http://www.epa.gov/bedbugs/](http://www.epa.gov/bedbugs/)

Bed bug images provided by U.S. Centers for Disease Control and Prevention

Bed bug bite image provided by University of Sydney Department of Medical Entomology

Bed bugs in baseboard image provided by Ohio State University Extension Entomology
Bed Bugs: School Response Flowchart

**School Responsibility:**
Providing a healthy, pest-free environment in which students can excel

**Parent/Caregiver Responsibility:**
Providing a safe and healthy living environment for the student

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**Bed bug found in/on:**

- **Child's clothing/belongings**
  - Discretely remove child from classroom.
  - Qualified individual should examine clothes, belongings, and locker for presence of bed bugs. Attempt to collect specimen for confirmatory identification.
  - Notify child's parents by phone. Bed bug inspection report (provided), and educational materials should be sent home with student. Parents should inspect or have pest management professional inspect the home and return notification letter.
  - If evidence of bed bug infestation, investigate other potential sources of bed bugs.
  - Promote rapid response by parents to treat the infestation at home. Provide educational materials and guidance if assistance is necessary.

- **Classroom/environment**
  - Consider sending parent notification letter (provided) for all students in affected classrooms.
  - Have trained staff or school pest management contractor inspect room(s) for evidence of bed bug infestation.
  - If no evidence of bed bug infestation, maintain vigilance.
  - If repeated instances occur, follow local policy and enlist the assistance of appropriate agencies.

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See the Schools and Daycares section of Michigan's Bed Bug Prevention and Control Manual for detailed instructions.

Dear Parent or Guardian:

We recently found a bed bug in your child's classroom. Bed bugs are a nuisance, but their bites are not known to spread disease. Bed bugs are usually active at night and feed on human blood. The bite does not hurt at first, but it may become swollen and itch, much like a mosquito bite. Watch for clusters of bites, usually in a line, on exposed areas of the body. If you have medical concerns for you or your child, please contact your doctor.

The source of bed bugs often cannot be determined, as bed bugs may be found in many places including hotels, planes, and movie theaters. Even though it is unlikely for bed bugs to infest a school, (fill in your school district here) will conduct an inspection and, if needed, will implement an integrated pest management plan in the area where the bed bug was found. (Fill in your school district here) will continue to work to identify bed bugs, provide thorough inspections of schools, and have licensed pest control specialists assist with pest management.

Contact your physician or school nurse for proper care and treatment of bed bug bites.

If you have any questions regarding bed bugs in your school, please contact Principal (add principal's name and contact info here). If you have any questions regarding bed bugs found in your home, contact your local health department or visit http://www.epa.gov/bedbugs/.

Sincerely,

School Nurse
(If one is available)

Principal

Sample letter adapted with permission from materials provided by the Central Ohio Bed Bug Task Force
**SAMPLE**

**Bed Bug Inspection Report**

Dear Parent,

Today, a bed bug was found on your child or in your child's belongings. While this does not necessarily mean that the bed bug was brought to school by your child, it is important to your child's health and to the school community that you inspect your home for signs of bed bugs.

Enclosed you will find information about bed bugs and an identification guide to help you with your inspection. Once you have inspected your home, please fill out the form below and return to the school office by __________.

Sincerely,

School Administration

I have been informed that a bed bug was found on my child at school. I understand that bed bugs pose a threat to my child's well-being and to the greater school community. I have read and understood the educational materials provided to me regarding bed bugs, and have:

- carefully checked my family and home for signs of bed bug infestation myself
- hired a pest management professional to check my family and home for signs of bed bug infestation. Name of pest control company: __________________________

After completing a careful inspection, I certify that to the best of my knowledge:

- I or a pest management professional found signs of bed bugs in my home, and I will take the following actions to eliminate this infestation:
  - ___________________________________________________________________
  - ___________________________________________________________________
  - ___________________________________________________________________
  - ___________________________________________________________________

- I or a pest management professional did not find signs of bed bugs in my home at this time. If I find evidence of bed bugs in the future, I will notify the school immediately and take action to address the infestation.

I understand that bed bugs can be spread to other homes if they are brought to school in backpacks, clothing, and other belongings. I understand that if bed bugs are repeatedly found on my child, that the school may take additional actions to protect the school community from bed bugs.

Signature ___________________________ Date____________

Pest management professional's signature ___________________________
Introduction

Bed bug infestations are continuing to spread through single-family and multi-unit homes. This means that more people are living with bed bugs than ever before. When more people live with bed bugs the possibility of people transporting bed bugs to other locations increases. Children living with bed bugs at home will bring bed bugs to school. We need to accept the fact that bed bugs have the potential to be transported to school every day that school is in session. Thus, there is a great probability any particular school will experience multiple bed bug introductions every year.

In 2010, several US schools dealt with their bed bug introductions very publically. Schools were closed when administrators, teachers, and parents reacted out of panic. In one case school administrators, acting in haste, hired an inexperienced pest management company who contaminated the school building by applying a pesticide that was inappropriate (illegal) for use indoors. This, of course, resulted in a media frenzy.

Luckily, bed bugs are becoming so common that dealing with them in the future should become somewhat routine (and of no interest to the media). However, in order to get everyone (students, parents, faculty and staff) accustomed to dealing with bed bug introductions (and/or infestations) it is important to have a plan of action for dealing with bed bugs. **The first and most important step of any bed bug management plan is to remain calm.** Dealing with bed bugs is a tedious process, and having a systematic and logical plan of action is really the best way to deal with this pest.

**Select an Experienced Pest Management Company Before You Have Bed Bugs**

Your school district may already have a contract with a licensed and certified pest management company. However, that company may have little or no experience in dealing with bed bugs. Find out immediately. Call and ask the manager, not your technician or salesman, about the company’s bed bug experience. How many bed bug jobs did they do last year? Are they familiar with integrated pest management? Do they have a printed copy of their treatment protocol? What products do they use, both chemical and non-chemical? What is their protocol for follow-up treatments? Ask them to provide you with bed bug references. If your current company does not have the expertise you need (and you need expertise) start investigating others. Find a good company by inquiring about those items listed above and call that company when the bed bugs show up. The price of a good bed bug company will most likely be higher than you have ever paid for your routine pest control. But keep in mind that time = money in bed bug control. You want your company to take the time they need to get the job done, or you risk not being satisfied with the results. Finding an expert bed bug company may take several days of investigation. You do not want to start your investigation after the bed bugs arrive. **Start looking for a bed bug control company today with the goal of having one company or maybe even two (if the first is not immediately available when you need them) identified by the end of the month.**
Bed Bug Identification Training for all Administrators, Faculty and Staff

There is no way to stop bed bugs from being brought into a school. Students arrive every day bringing their potentially infested belongings with them. The school can be bed bug free one day and have bed bugs brought in the next. So bed bug prevention for schools is really early detection. Bed bugs must be detected very quickly to stop an infestation from developing, or before they bite someone. Once you have selected your expert bed bug company, have them present a bed bug identification program to your employees. All employees need to know what live bed bugs look like (all life stages), so they can recognize a bed bug when they see one. Why everyone? Employees are located all over the school and if all eyes are looking for bed bugs, there is greater chance that they will be discovered quickly. Keep in mind that students are not the only people capable of bringing bed bugs to school. Employees can as well.

Alert Parents to the National Bed Bug Problem

People hate to be surprised. You can go a long way to stem any potential bed bug hysteria by warning parents ahead of time that bed bugs sometimes show up in schools. At the beginning of the school year, provide parents with a bed bug awareness brochure (your expert bed bug company can help you with the information). Let parents know that your school recognizes there is a national bed bug resurgence and that your district has a bed bug action plan. Let parents know what the procedure will be if an infestation, not just a single bug on a kid’s sweater, is found. Let them know that the school will not close for bed bugs. Also, provide pictures of bed bugs in the brochure so parents can recognize bed bugs in their own home. It may also be helpful to provide parents with information on how to prepare their child’s belongings to come to school if they already know they have an infestation at home (bagging, inspection before they leave the home, use of a hot dryer).

Bed Bug Prevention Methods

Clutter Removal. Clutter is the bed bug’s best friend. With many places to hide, a bed bug population is practically guaranteed some survivors even after the most aggressive treatment. Unfortunately, some of the nations finest school teachers have reputations for being pack rats. Quite often classrooms are loaded with stacks of papers and teaching aids that have not been used for years. With bed bugs spreading across the nation, it is time to clean house. If clutter is a problem at your school, next school break make it a priority to reduce unused items (anything that has not moved in the last two years) by at least half. Take into consideration that if an infestation does occur, all items may have to go anyway. So the best way to save the most precious items in the future is to eliminate potential bed bug harborages today.

Limit the Items Being Brought to School. Several recent pediatric studies have focused on the physical effects of children carrying heavy backpacks full of school supplies to and from school. Repeatedly transporting items between school and home also increases the possibility of students carrying bed bugs to school. Limiting the number of items that have to be transported back and forth would go a long way to reduce the chances of bed bugs being brought in. Are there items that students could bring to school and leave at school until the end of the school year? Are there school items that students could take home and leave at home until the end of the year? Keep in mind these items can be heat treated at the end of the year. (see page 4)

Containing Bed Bug Introductions. Although there is really no way of preventing bed bugs from being brought into school, there is the possibility of containing them once they get there. Clear plastic storage containers, like the one shown in the photograph, can be used to store backpacks, lunch containers, coats and other cold weather gear while the student is in the classroom. Labeled containers eliminate the problem of students’ possessions contacting
each other in coatrooms or other storage areas where bed bugs might climb from one item onto another. The smooth interior of the container is also difficult for the bed bugs to climb so wandering bed bugs are likely to fall into the bottom of the container. When the students leave for the day, the containers should be visually inspected for any signs of bed bugs. If a bed bug is found in a container, the source of a potential infestation will be known, and the parents should be alerted to the problem. If the parents are already aware of the bed bugs, the parents and the school can work together to make sure that the student’s possessions are treated in the school dryer every day before class.

*Canine Scent Detection.* Another proactive approach to bed bug detection is to have your school inspected at regular intervals by a bed bug sniffing dog. While some dogs (and their handlers) are better than others, any dog that has been trained correctly is far better at detecting bed bugs than a human. The dogs that have been trained to detect bed bugs are specifically trained to detect only live bed bugs (they do not respond to dead infestations) and even single bed bug eggs. One advantage to having a school inspected by a dog is that a bed bug dog can check rooms very quickly. Where it might take two pest management professionals several hours to thoroughly inspect a classroom, a dog could complete the inspection in about 5 minutes. Dogs are particularly useful for inspecting hundreds of school lockers, and multiple employee areas. Keep in mind that most dogs are not 100% accurate (but usually above 90% accurate), so the dog handler must also be well trained. The handler is responsible for confirming bed bug presence when the dog gives a positive signal. There are some charlatans out there with dogs that give false positives. So make sure you hire a certified handler and be present the day of the inspection. The handler should show you live bed bugs when the dog gives a positive signal. Never pay for a chemical treatment unless you have been shown live bed bugs.

**Develop a Code of Practice (Policy, Procedure, Methodology) for when a Bed Bug is Found**

It will be critical to decide how to respond to a single bed bug found on a child’s clothing versus how to respond to one or more bed bugs loose in a classroom. The infested classroom will require professional treatment and quite possibly, parent notification of the infestation. A single bed bug on a child will require discretion. Have a written code of practice in place for both situations. Communicate this code of practice to all faculty and staff.

**If a Bed Bug is found in a Classroom or Elsewhere in the Building**

If there is an infestation in the building, you may want to alert the parents of children inhabiting the infested room that bed bugs have been found. This is so they can inspect their child’s belonging before bringing them into their home. Let parents know the treatment protocol for the affected classroom, and where the children will meet for class the next day. With regard to the infested room:

- Identify with a sign the exact location where the bed bugs were found, and isolate that location.
- Call the pest management company immediately (no need to leave the room unless the infested area cannot be avoided; no need to panic).
- Capture at least one bed bug and save it in a plastic bag for positive identification. Crush all others.
- If your pest control company confirms the infestation by identifying your captured specimens, or by inspecting and finding additional bugs, they should provide you with instructions on how to prepare the classroom for treatment. Follow all instructions to the letter (these may include vacuuming, clutter removal, etc.) so that the company can begin their treatment protocol.

**Potential Treatment Methods**

- Clutter removal
- Bed bug detection devices
- Steam
- Vacuuming
- Desiccant dusts (e.g. diatomaceous earth)
- Pressurized CO₂ snow
- Localized insecticide applications
• The pest management company will advise you as to how long after any insecticide application the insecticide label requires that the classrooms remain empty.
• See the list of potential treatment methods above. For a complete explanation of each method, see fact sheets titled Non-Chemical Bed Bug Management and Bed Bug Treatment Using Insecticides.

If a Bed Bug is Found on a Child

In most cases bed bugs will be brought to school on a child’s clothing, backpack or other belongings. Luckily, these types of introductions rarely require that the school be treated, or that parents (other than the child’s) be notified. There is also no need to send the child home. In this particular case discretion is critical for preventing bed bug hysteria. Luckily, heat is an excellent bed bug killer, and nothing is more effective for killing all bed bug life stages than a hot clothes dryer. The student’s clothes can be tumbled in the dryer on high for 30 minutes (you will need temporary clothing available for the child during this process). A dryer with a removable shelf is excellent for heating items that cannot be tumbled, like backpacks and school supplies. It is highly recommended that schools purchase a clothes dryer (nothing more than a dryer you would purchase for your home use) for the purpose of dealing with bed bugs. If bed bugs become a common occurrence in your school, the dryer will pay for itself by keeping up school attendance and reducing the need for pesticide applications.

When a bed bug is found on a child:

• The nurse of some other predetermined person should be called to escort the child and their belongings to the dryer area.
• Have the child change into temporary clothing and place all of their clothes (including shoes) in the dryer set on high for 30 minutes.
• After the clothes are heat treated, have the child change back into their clothes and return to class.
• Heat the rest of their belongings and the temporary clothes on high for 30 minutes. Use the dryer shelf if their belongings cannot be tumbled.

Heat Treatment for Bed Bugs

Heat systems are now used by some pest management companies, and these systems are available for purchase by school districts. The most widely available heating system consists of large industrial heaters, multiple high volume fans, temperature sensors and a software package for monitoring the ambient temperatures at the sensors. These systems are used for treating entire rooms. The room is treated by raising the ambient temperature to ~135°F. This temperature will not damage items in the classroom (including computers) but the heated air will be pushed by the fans into cracks and crevices where bed bugs hide. The systems kill the bed bugs by heating them to their thermal death point (114-118°F). Heat can also be used to kill bed bugs in a sealed storage chamber. The infested items (books, furniture, electronics, etc.) are placed inside the chamber and heated to the bed bugs’ thermal death point.

Unlike chemical fumigation, heat does not have to be applied by a certified pest management professional because it does not involve pesticide use and is non-toxic. Heat chamber and whole-room heater packages can be purchased by the school division and applied by trained employees in their buildings. While the cost of purchase is relatively high (> $60,000), an entire Department of Education region might be able to purchase a system and have specific employees trained to transport and apply the heat system in different schools. Note: While heat treatment is usually 100% effective, building construction features sometimes create heat sinks that provide refuge for bed bugs. So it is sometimes necessary that the heat treatment be supplemented with a single insecticide application to harborage locations.
Summary

Although bed bugs have the potential to be brought to school every day, remain calm. A single introduction does not mean the building is infested. Let parents know you have bed bug action plan that includes bed bug prevention (reduced clutter, individual storage containers, or even periodic canine inspections), training for employees, and the hiring of an expert pest management company. Have a code of practice regarding how to address infestations in a classroom (rapid professional treatment), versus a bed bug found on a student (discretion and a clothes dryer). Unless you are a trained state-certified pest management professional, never attempt to use any insecticide for bed bug or any other pest control in a school building.
Bed Bug Invasion

PHILIP SMITH
COMPLIANCE ASSISTANCE SPECIALIST

WV DEPARTMENT OF AGRICULTURE
REGULATORY & ENVIRONMENTAL AFFAIRS
PESTICIDE REGULATORY PROGRAMS
What are bedbugs?

- Small, brown, flattened insects
- Feed on blood of people while they sleep
- Hide during the day
- Can hitchhike on backpacks, clothing, books, and other items
Bed Bug Resurgence

- Increasing in incidence and severity in the US
- Bed bugs are a socially transmitted pest
- Bed bugs are being found in schools and other workplaces
- Treatment can cost a lot of money especially if delayed
- They are pesticide tolerant
- Spread easily, adept at hiding from us
- Increase in human travel
- Changes in pest mgt. practices
- Used furniture/mattresses
NPMA Survey

• 1 in 5 Americans have come into contact with bed bugs
• 46% of Americans have changed at least one behavior because of bed bugs
• 27% of respondents inspect or washed all clothing after returning from a trip
• 25% of respondents have checked their hotel room for bed bugs
• 12% have altered or cancelled travel plans because of concerns about bed bugs
• 37% incorrectly believe that bed bugs are attracted to dirty homes
Biology

- Blood meal required for each molt
- Life cycle can take 4-5 weeks
- Adults can live 6-12 months and nymphs up to 3 months without a meal
- Feed by piercing skin with a stylet-type mouth
- Bite is nearly painless, saliva injected produces inflammatory reaction (like mosquitoes)
- Reaction time may be delayed by 2 days (not everyone reacts to bites)
Identifying Bites

- Bite does not hurt immediately
- May develop into itchy welts
- Do not transmit disease
Bed bugs are attracted to humans through heat and CO$_2$
Bites are like mosquito bites

- Bed bugs cannot be confirmed by bites alone.
- Live bed bugs must be found.
Mosquito bites are familiar
Flea bites tend to be smaller, round, and red.
If a bed bug is found on a student

- The student may have bed bugs at home.
- Nurses – look for bites on arms, face, hands, or legs.
- Skin exposed while sleeping.
- Ask questions.
Bites may occur in lines
# Methods of bed bug introduction

## Passive
- Bed bug is introduced from another infested location, but not by its own locomotion.
- Furniture
- Mattress
- Things we carry or wear (purse, coat, shoes, backpacks)

## Active
- Bed bug migrates by walking from an infested area.
- From one room to another
- From one apartment to another via pipes, telephone or cable wires.
- Down a hallway after dropping of an item being discarded.
MYTH:

- Bed bugs are associated with poverty and unsanitary conditions.
TRUTH:

- Bed bugs prefer to be warm and safe.
- Buildings and bedding of all qualities can become infested.
- Bed bugs do not discriminate.
- The host must be reliable.
- However, bed bugs are fast becoming an issue of those who cannot afford proper treatment.
Today...

- Bed bugs are showing up in k-12 schools.
- They can show up in child care facilities.
- They have been found in movie theaters, retail stores, taxis, trains.
- Do they reproduce in these places? So far...there is no strong evidence.
- Introduction vs. infestation...
Clutter inhibits control

Nothing is better for bed bugs than millions of places to hide!
It is nearly impossible to determine where bed bugs originated. Laying blame is pointless. Quick action is essential to prevent further spread.
Health effects of bed bugs

- They do not transmit disease, but scratching bites can cause secondary infections.
- They may trigger asthma.
- Infestation causes stress, anxiety, loss of sleep, loss of work, financial burden, poor quality of life, pesticide misuse.
Fear and anxiety

- The only way for a bed bug sufferer to know whether their infestation is eliminated is to WAIT to be bitten again.
- Anticipation of being bitten again causes anxiety and stress, and even the delusion that every itch is a bed bug bite.
- This may trigger delusory parasitosis and other psychological issues.
Bed bugs in schools

- Coming from the homes of students or staff.
- Introductions, not infestations.
- Bed bugs may fall off backpacks or bags, belongings, coats, shoes.
- They do not infest the skin or hair, but may hitch a ride on clothing.
Bed bugs in schools

- The school classroom or offices may be areas of transfer from person to person.
- Preventing spread is the challenge.
- Prevention requires awareness and participation of the school community.
- Changes in or adoption of policies.
- The development of a plan for when a bed bug is introduced into the school.
Be proactive – Make a plan!

- Who will do bug ID quickly?
- Procedures for:
  - Dealing with a student with a bed bug
  - Inspecting the office or classroom
  - Treatment
  - Prevention
  - Parent and community education
- Also you should have materials to hand out
First step – Correct identification

- Specimen found in a school – get it to a pest management pro or a diagnostic lab.
  - WVDA Insect Lab, Barry Crutchfield – (304) 558-2212
- Keep it in good shape – don’t crush it.
- Female, male or nymph? Important
- There should then be a thorough inspection of the office or classroom where the insect was discovered.
Bed bugs?
Bed bugs vs. other pests

- Though you may never see an arthropod you may see the symptom of bites on a student.
- Bites are difficult (impossible) to diagnose without knowing the circumstances.
- Each type of biting pest has circumstances in which it will be present.
- Understand the circumstances.
If a bed bug is found on a student

- The stigma exists, and gets reinforced, be sensitive to the child’s privacy.
- They don’t want classmates to know.
- Kids may come to school tired or anxious because of this issue.
- Parents may deny there is a problem.
If a bed bug is found on a student

- DISCREETLY bring the student and their belongings into the nurse’s office and inspect their clothing, shoes, bags.
- Look in seams:
  - Fecal stains
  - Live bugs
  - Eggs
  - Shed skins
Evidence may be difficult to see

Univ. Minnesota – Dr. S. Kells
If a bed bug is found on a student

- Any insects found should be kept for ID.
- Talk openly with the student.
- If bed bugs at home are confirmed, the principal should contact the parents.
- Have good information on hand to give to parents (ID, inspection, safe treatment).
- Emphasize that people are responsible for preventing transmission.
If a bed bug is found on a student

- Recognize that kids might be stressed or tired as a result of this.
- Children of families dealing with bed bugs at home should not be barred from attending school.
- Unlike lice, bed bugs can take months to eradicate.
- Steps should be taken to prevent the spread or transmission.
Bed bug prevention in school

- School community should be notified about the bed bug sighting and offered resources (website or handout).
- Schools should NEVER close due to bed bugs
- Belongings of students (class, grade, wing, whole building?) should be separated as a matter of policy.
- Ziplocked bags, storage containers for bags, coats.
- This is reality.
Don’t Panic

- Bed bugs do not transmit disease
- They are not invisible
- It is possible to get rid of them
- Pro-active approach is best
Finding Bed Bugs

- Easy to “spot”! Look for smash & drags
- Baseboards for exoskeletons
- Phillips Screws in furniture
- Mattress Seams
- Behind headboard
- Crown of walls
- Black droppings
Aggregations Make Them Predictable

- Tendency to live in groups combined with dependency on blood and nocturnal habits tend to limit areas
- Infested apartments
  - 70% beds
  - 23% upholstered furniture
  - 7% less predictable
    - Within books, coffee maker, deodorant dispenser
  - (Potter et al. 2006)
- May be an indication of the size of the infestation
# Keys to Bed Bug Management

- **Introduction or Infestation?**
- **Determine viability of infestation**
- **Select a pest control company with experience NOW** if a school/housing complex
- **Vigilance – Routine Inspections, Follow UP**
- **Simplify (PC for Declutter)**
- **A clothes dryer and vacuum work wonders regarding introductions**
Bed Bug Treatment Options

- IPM: Must clean clutter
- Freezing
- Steam
- Heat Treatments
- Insect Growth Regulators
- Insecticides (multiple – today’s bugs are resistant to pyrethroids)
- Monitoring devices critical
- Preventative: bed encasements
Monitoring
Understand that not everyone can afford pest control at home

- No ready answers for “do it yourself”
- Experienced pest control is logistically better than going it on your own (and safer)
- Snake Oils – They’re everywhere!
- SIMPLIFY, Vacuum, Clean, encase, monitor!
How to eliminate bed bugs from classrooms

- Do not allow unlicensed staff to apply pesticides
- Backpacks and other items can be inspected daily or even placed in sealed containers in some circumstances. (Avoid piling bookbags on top of each other)
- Install monitoring devices in classroom
- Are children sleeping in classroom?
Be Prepared

- Do not panic!!!
- Use your role as Public Health Official to minimize hysteria.
- This is a difficult problem, but not an impossible one.
- Leave pest control advice to a PMP with bed bug control experience

(Consider flowchart for schools from Michigan)
Develop a Bed Bug Response Plan

- **Schools**
  - Training for employees/students on biology/behavior/identification
  - Determine competent PMP’s for contract
  - Discuss what treatment options contracted PMP will/can use and how it will fit your school
  - Strategy for inspections of classrooms (frequency, extensiveness, notification/education of class and/or parents)
  - Evacuation of rooms for treatments – Where to put displaced students?
  - Notifications – The way you word it is as important as the message
Developing a Media Response Plan

- How do we respond?
- What are we communicating?
  - “Bed bugs are real”
  - “Bed bugs are back – explain why they are back”
    - Increased travel
    - More clutter/trading of used items
    - More targeted pest practices
  - “Bed bugs can infest anywhere”
    - No socioeconomic attraction
    - Not just homes/hotels – retail stores and theaters even have had issues
Media Response Plan Continued

- **Prevention = Vigilance**
  - We have been proactive – show bed bug response and inspection plan
  - Give tips on inspections

- **Bed Bugs are hard to control**
  - Elusive, quick breeding, no silver bullet
  - Consumers should inquire about a PMP’s experience in bed bug control

Your work with the media shapes the story told and influences the opinion of the public
Pesticide law

- No unlicensed person can legally use a pesticide in a school.
- Only hire a licensed pest management professional.
- Restrictions cover baits, sprays, insect repellent.
- Does not include traps, vacuums, or other cleaning methods.
- Bleach does not kill bed bugs.
Flow Chart & Sample Letters

Bed Bugs: School Response Flowchart

- **School Responsibility:** Providing a healthy, pest-free environment in which students can excel
- **Parent/Guardian Responsibility:** Providing a safe and healthy living environment for the student

- Child's clothing/belongings
  - Bed bug found (assumed specimen is confirmed bed bug)
  - Discreetly remove child from classroom
- Classroom environment
  - Consider sending parent notification letter (provided) for all students in affected classrooms
- Notify child's parents by phone; bed bug inspection report provided, and educational materials should be sent home with student. Parents should inspect or have pest management professionals inspect the home and return notification letter.
- Evidence of bed bug infestation
  - Have trained staff or school pest management contractor inspect home for evidence of bed bug infestation.
- NO evidence of bed bug infestation
  - Maintain vigilance
- Investigate other potential sources of bed bugs.
- Provide prompt response by parents to treat the infestation at home. Provide educational materials and guidance if assistance is necessary.
- If repeated instances minor, follow local policy and enlist the assistance of appropriate agencies.

See the Schools and Daycares section of Michigan's Bed Bug Prevention and Control Manual for detailed instructions.

WV School Bed Bugs?