

# Hampton City Schools Bed Bug Protocol



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## I. Introduction

Bed Bugs have become a growing concern across America and Virginia has been no exception to where these bugs have traveled. Virtually any place where people stay or travel could potentially have bed bugs. Schools are also no exception to this problem because of the number of people - students, teachers, and staff that may unknowingly encounter bed bugs somewhere in their travels or from visitors to their homes and workplaces.

Why have bed bugs made such a dramatic resurgence? Bed bugs were common through the World War II era but over the past several decades, most of North America has been virtually bed bug free. Many wondered if this parasite was real or just an imaginary bug from the popular bedtime phrase, “sleep tight and don’t let the bed bugs bite!” The truth is that these bugs had virtually been eliminated in North America primarily due to improved living standards and the widespread use of insecticides like DDT and Malathion. Bed bugs started to make their resurgence in the United States in the late 1990’s. There are a number of factors that have facilitated the return of bed bugs: changes in pest control management and practices, bed bugs resistance to modern day pesticides, worldwide increase in bed bugs coupled with more frequent introductions during international travel and lack of public awareness has perpetuated the continued dispersal of bed bugs. Bed bugs do not discriminate, and will infest any human dwelling, from the most cramped student apartment to the most luxurious five-star hotel.

Hampton City Schools has created this protocol as a guide and reference tool for school administrators and personnel in an effort to aid in the rapid identification and control of bed bugs in the school environment.

## II. Overview of Bed Bugs

### A. Biology

Bed Bugs belong to the *Cimicidae* family. They are parasitic insects that feed exclusively on the blood of warm blooded animals. The *Cimicidae* family includes many species and *Cimex Lectularius* (bed bugs) is the species that is now infesting homes in Virginia. Bed bugs live where people live because they feed on sleeping humans. Bed bugs are primarily nocturnal and feed exclusively on blood and are believed to be mostly inactive between blood meals. Between blood meals they hide in secretive resting places. Individual bed bugs do not seek a blood meal everyday and may go several days to a week or more between each blood meal.

Bed bugs are distinguished from other similar parasites by their extreme dorsal ventral (back to stomach) flattening, their lack of wings, and their reddish brown coloration after feeding. If the bed bug has recently had a blood feed, the flattening is not as obvious. They are nearly as wide as they are long and oval in shape. They typically do not get larger than 7 mm (1/4 inch) in length. Infestations with bed bugs are sometimes associated with a sweet, musty odor produced by glands on the ventral (bottom) side of the thorax (middle body segment). Immature bed bugs also known as nymphs are translucent and no bigger than a pinhead (1 mm).

## **B. Life Cycle**

Bed bugs go through five nymphal or immature stages after hatching and before molting one final time into an adult. An adult female can lay 1-5 eggs per day and eggs hatch approximately 7-10 days after being deposited by the female. Development from an hatched egg to an adult takes approximately 1 ½ to 2 months, but can take longer depending on environmental conditions. At each immature stage of development, the bed bug requires at least one blood meal. Adult bed bugs feed many times throughout their lifespan. They usually feed every 3-7 days depending on temperature and other conditions such as human blood availability. Nymphal stages last from about 4 days to 24 days. Adults may live for more than a year. The life cycle from egg to adult can take place in under 5 weeks under optimal conditions. Under some conditions, bed bugs can go for up to one year between blood meals. Females must mate to lay eggs. Mated females lay eggs singly, cementing them to surfaces in crevices and protected areas away from, but near a host sleeping area. A female bed bug can produce over 500 eggs in her lifetime.

Temperature affects the survival of bed bugs. They are remarkably resistant parasites and can survive freezing temperatures (32F) for days and tolerate much lower temperatures (5F) for short periods. Their upper lethal temperature is 120 F causing death within minutes, but longer exposure to temperatures above 113 F is also lethal.

## **C. Bed Bug Movement**

By nature, bed bugs are stow-a-ways. They hitchhike to school by hiding in cracks and crevices of book bags, computer bags, furniture, clothing, boxes and other objects. Bed bugs cannot fly or jump. The only way they can move is to crawl or hitchhike a ride.

## **D. Feeding Habits**

Bed bugs are nocturnal creatures which means they come out at night to feed. They locate their meal using heat and carbon dioxide sensors through olfactory

(smell) receptors on their antennae and mouthparts. Bed bugs normally feed late at night or early in the morning when the host is in deepest sleep. The host does not feel the bite because the bed bug's saliva contains desensitizing agents that prevent the host from feeling its mouthparts penetrate the skin. The bite is usually small, pinprick-sized lesions that may or may not become inflamed. How a host reacts to bed bug bites varies from host to host. Most often, the host will show no reaction the first time they are bitten, but subsequent bites may develop into welts that itch. Some hosts react severely with welts that itch for weeks. Bed bugs feed for 3-10 minutes and then retreat to a protected hiding spot to digest the meal. During digestion they will defecate, leaving reddish brown spots that are often characteristic of bed bug infestations. Bed bugs feed on exposed skin and not skin that is covered by clothing. Bed bugs rarely feed during daytime hours, but could, if they have been denied a host for long periods of time.

#### **E. Treatment of Bites**

Bed bug bites usually do not require any medical treatment, just clean the bites with soap and water. If a secondary infection occurs (usually from scratching), it is recommended to consult your healthcare provider. There are various corticosteroid creams, antibiotic creams and oral antihistamines available over the counter but it is highly advisable for an individual to consult their healthcare provider to ensure they are appropriately treating the bites.

### **III. Procedure If Bed Bug Is Found**

#### **A. General Information**

In general, the school environment is not conducive to bed bug infestations. Bed bugs prefer an environment where they can hide during the day and come out at night to feed on a sleeping host. Because most schools do not provide this type of environment, major infestation of schools are rare. However, bed bugs can hitchhike to and from school by hiding in clothing or book bags, thereby providing a hub for bed bugs to spread. To prevent the spread of bed bugs it is important to develop plans for the early identification and treatment of bed bugs to prevent possible spreading. Keep in mind that students are not the only people capable of bringing bed bugs to school. Employees can as well.

#### **B. Procedure**

The first and most important step of any bed bug management plan is to remain calm. Please note - if a bed bug is found on a child in school, it does not mean the child brought the bed bug into the school. Bed bugs do not infest people, they only feed on them. Bed bugs can crawl onto or off of a person (or their belongings) at anytime. If a suspected bed bug is found on a child, a child's belongings (coat,

book bag, books, etc.) or anywhere else in a school, the following procedures should be followed:

1. If a suspected bed bug is found on a child or a child's belongings, the child should be discreetly removed from the classroom with utmost discretion and diplomacy and taken to the nurse's office. It is very important to address the issue with care and sensitivity. It is also important for staff to direct any questions or concerns to the principal and not make comments in front of the child, as much as possible.
2. The nurse will examine the child's clothing and other belongings in the clinic. It is very important for staff members to remain calm and not draw attention to the child or mention bug/bed bug. Care of the student(s) with possible bed bugs: The school nurse will inspect the student in a private area in the clinic and follow the following procedure:
  - a. If a live bug (possibly a bed bug) is observed while the nurse is examining the child or found in the building (classroom, resource room, etc.), collect the bug for identification. Try to keep the bug as intact as possible. It is more difficult to identify a crushed bug. It is recommend if possible, to use gloves or a tissue and attach the bug to a piece of clear tape. The tape with the insect should be placed on a white sheet of paper or index card and then placed in a ziplock bag and sealed until it is identified. The zip lock bag should be labeled with the date, name of person collecting the sample, location where it was found and contact number. The student should not leave the clinic until the bug has been identified. If it is a bed bug:
    - i. The nurse should see if the student has clothes to change into (depending on the grade level) that have been in the school for a while, NOT IN BOOKBAG. If the student does not, the nurse, once inspection is accomplished, will need to call the parent to pick the student up. Student must remain in the clinic until parent pickup.
    - ii. If the student does not have own clothes but the **school has a clothes closet** with clothes that fit the student, have student change into those clothes. Ensure socks (replace socks if available) and shoes have been checked thoroughly. Seal student's clothes in ziplock bag to be sent home with parent. Student must remain in clinic until Integrated Pest Management (IMP) talks with principal about plan.

- iii. If the **school has a dryer** and there are extra clothes for the student to change into, the clothes the student is wearing, jacket and emptied backpack can be placed in the dryer on high for 30 minutes. This will kill live bed bugs. Before going home with parent/guardian, the student can change back into his/her clothes that were dried.
    - iv. If the school **does not have a dryer**, then the nurse will need to inspect the clothes, socks, shoes, jacket, etc. thoroughly to ensure no bed bugs are present. The student's backpack should also be checked for bed bugs.
  - b. The school nurse will also check for evidence of bites on the skin if a bed bug is found on a child. Often the source of a bed bug is unable to be determined but these are questions that should be addressed:
    - i. How many bed bugs were found?
    - ii. Were they found associated with one student or more than one student (e.g., on clothing, backpack/bag, desk)?
    - iii. If more than one person is involved, are those individuals related or have something in common such as being classmates, use the same transportation, etc.?
    - iv. Where were the bed bugs found in the school (classroom, lockers, office, gym, transportation, etc.)?
    - v. Does this student have siblings in the school division?
- 3. Once the specimen is collected the following should take place:
  - a. Notify the principal that a possible bed bug has been found.
  - b. The nurse will contact Integrated Pest Management (IPM) Coordinator (also known as the Environmental Compliance and Safety Coordinator) 757-850-7283 or 757-504-6577. A Bed Bug Specimen Data Form (Appendix A) needs to be completed by the school nurse and given to the IPM upon arrival. The nurse should make a copy of the Bed Bug Specimen Data Form, once completed, and give to the principal. The IMP Coordinator will visit the site, collect the Bed Bug Specimen Data Form and determine if it is a bed bug. **It is extremely important to confirm this first before proceeding with the next steps.**

- c. The nurse should notify the parent/guardian and provided a copy of the Bed Bug Information Sheet (Appendix E) when they come to pick up the student.
4. Once confirmed that it is a bed bug, the school nurse will notify the Health Services Coordinator, at 757-727-2363, of the confirmed bed bug and if there are siblings within the school division. If the student has siblings in other buildings, the Health Service Coordinator will then communicate this to the Integrated Pest Management Coordinator and/or Director of Operations and Maintenance and the school nurse at the other school(s) where the sibling(s) attend. A decision will be made to inspect the room(s) where the other siblings attend by the Director of Operations and Maintenance and/or IMP Coordinator.
5. The IMP Coordinator will make contact with the Transportation Department to inform them of the findings. The parent/guardian will need to provide transportation home on the day the bed bug was confirmed.
6. The Operations and Maintenance Department is responsible for overseeing the IPM plan and will work closely with the principal of the building. Although it is unlikely for bed bugs to be spread in a school environment, an inspection will be conducted by the district's licensed, contracted pest vendor and, if indicated, bed bug monitoring stations may be placed in strategic locations as determined by the pest company. Treatment of the school and/or area, will be determined by the licensed Pest Control Company that is very knowledgeable in the treatment of bed bugs. The IMP Coordinator will schedule treatment, which will be accomplished after school hours.
7. In most instances, students should **not** be excluded from school due to bed bugs except possibly the first day of bed bug identification. **A school should not be closed due to the discovery of bed bugs.** If the bed bug was found on a student's clothing or other belongings, the parent/guardian should be notified by the nurse. The parent will need to pick up the student. **The student cannot ride the bus home.** If it is determined that there is a bed bug problem in the home, the school nurse will complete a school social worker referral. The school nurse, social worker and principal will work together to develop a plan and make recommendations to assist the family in handling the bed bug concern and prevent further introduction of bed bugs into the school environment (Appendix B).
8. On the next school day the parent will bring the student to the clinic for the nurse to recheck. If no bed bugs observed on clothing and other student items the student may return to class. If a bed bug(s) is observed, the nurse will remove the bed bug(s) and a conference with the principal,

parent and nurse should occur. It is important that the student resume their normal school day as soon as possible. The student will not be able to ride the school bus home until no bed bugs have been found during the nurse's daily examinations.

9. It is the principal's responsibility to notify the Director of School Leadership. The Director of School Leadership will then notify the Executive Director of Public Relations. If bed bugs have been found in more than one area, it is recommended that the principal call a quick staff meeting at the end of school to appropriately address the situation with staff members and present the facts, inform of any preparation required in their rooms, alleviate fears and address how to answer questions from parents.
10. The principal is responsible for keeping documentation on communication and treatment. This would include but is not be limited to the following information:
  - a. Notification of IPM Coordinator to make an immediate visit to the school and identify the bug.
  - b. Arrangement for IPM to inspect the classroom and/or entire building in which the student with the bed bug has been.
  - c. Document when the IPM plan was implemented (inspection, treatment, etc.). The IPM plan should include inspection of crevices in baseboards, pictures, student work displays, furniture, window and door casings, wallpaper, electrical switch plate covers, telephones, clocks, etc.
  - d. Document if bed bug monitors were placed in strategic locations as determined necessary by IMP.
  - e. Maintain the report that is provided from the licensed pest control company.
  - f. Continue to document the work done on the building that would be related to the bed bug incident.
  - g. Maintain a Communication Log (Appendix F). This log should be maintained for three (3) years.

### **C. Notification of Parents**

If it is determined necessary, the principal, along with his/her Director of School Leadership, will determine the best method of parent notification such as a letter and a



Connect-Ed (Appendix D). It is recommended that the Connect-Ed be sent so parents receive it as the students are arriving home from school and will know to look for a letter. A decision will be made if just a particular class needs to be notified or if the entire school needs to be notified based on where the bed bug was found and the extent of the infestation.

#### **D. School Prevention Measures**

It is important to remember that the school environment is not conducive to bed bugs and infestations in schools are uncommon. If it is determined that a student lives in a bed bug infested home, the school (nurse, social worker, counselor and principal) will work with the parent/guardian (s) to develop strategies for preventing the further spread of bed bugs (Appendix B).

#### **IV. References**

- Alexandria City Public Schools (November, 2010), *Bed Bug Protocol for Schools*, Office of Student Services and School Health Services, Alexandria, VA.
- Connecticut Coalition Against Bed Bugs, *Bed Bugs How to Deal with Them*, [http://www.ct.gov/caes/lib/caes/documents/bed\\_bugs/cabb\\_bed\\_bugs\\_how\\_to\\_deal\\_with\\_them.pdf](http://www.ct.gov/caes/lib/caes/documents/bed_bugs/cabb_bed_bugs_how_to_deal_with_them.pdf)
- NC State University (February, 2011), *Sample Protocol for Bed Bugs Found in NC Schools*, North Carolina School IPM Program.
- Newark Public Schools (September, 2011), *Understanding and Controlling Bed Bugs IN A PUBLIC SCHOOL*, Steve Morlino, CFM, CEFM, LEED, Executive Director Facilities and Management.
- New York City Department of Education (February, 2011), *Bed Bug Information Kit for Schools*, Cathleen P. Black, Chancellor, New York City.
- Virginia Beach City Public Schools (February, 2011), *Virginia Public Schools Integrated Pest Management for Bed Bugs*, Virginia Beach, Virginia.
- Virginia Department of Agriculture and Consumer Services, *Bed Bug Biology and Behavior*, Dini M. Miller, PhD. and Andrea Polanco, Department of Entomology, Virginia Tech. <http://www.vdacs.virginia.gov/pesticides/pdf/files/bb-biology1.pdf>
- Virginia Tech Department of Entomology, *Bed Bug Action Plan for Schools*, Dini M. Miller, PhD.
- Bed Bugs 101™ <http://www.bedbugcentral.com>
- Bed Bugs: What Schools Need to Know [https://www.michigan.gov/documents/.../Bed\\_bugs\\_schools\\_293498\\_7.pdf](https://www.michigan.gov/documents/.../Bed_bugs_schools_293498_7.pdf)
- Bed Bugs: How to Protect Yourself and Your Home <https://cchealth.org/bedbugs/pdf/2016-protect-yourself-and-home.pdf>

## Hampton City Schools Bed Bug Specimen Data Form

On \_\_\_\_\_ (date) a presumed bed bug was found. Complete the following information:

1. The bed bug was found (Circle one of the following):
  - On a student and/or belongings - Classroom Number: \_\_\_\_\_
  - On a staff member and/or belongings - Classroom Number: \_\_\_\_\_
  - On furniture/wall within a room: Room Number: \_\_\_\_\_
  - On the floor in the room
2. School Name \_\_\_\_\_
3. Room Number or exact location \_\_\_\_\_
4. School Address \_\_\_\_\_
5. School Principal \_\_\_\_\_
6. School Principal Phone # \_\_\_\_\_

Contact the Integrated Pest Management (IPM) Coordinator at **757-850-7283** or **757-504-6577**.

Have suspected bed bug in a ziplock bag so IPM can confirm the identity of the bug found.

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Provide this completed form to the IPM Coordinator upon arrival.

Action Taken by Integrated Pest Management Coordinator:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

***Complete back of sheet.***



## Helpful Tips to Minimize Bed Bugs in School

1. Reduce the amount of clutter in classrooms and closets.
2. Reduce the number of rugs
3. Work with parents of any student living in an infested home to develop strategies for preventing the further spread of bed bugs:
  - Encourage parent to store their child's freshly laundered clothing in sealed plastic bag or storage container with a lid until the student puts them on in the morning.
  - Keep school items sealed in a plastic bag or plastic storage box with a lid at home to limit the likelihood of re-infestation (backpacks, lunch boxes, all school supplies, etc.).
  - Provide textbooks for the class and keep the other set at home when possible.
  - Send only essential items to school with the student.
  - Remind parents that rent their home to notify the landlord immediately, especially if an infestation is suspected.
  - Inform parents that own their home and an infestation is present that the recommendation is to contact a professional pest management company should be consulted immediately.
4. Inspect the student's belongings (including: hat, shoes, jacket, backpack, and school supplies) and clothes daily for an extended period of time. This needs to be done very discreetly and in a confidential manner, in school nurse clinic by the nurse.
5. Vacuuming by the custodian should be done in areas that students typically store their belongings in (example: coat closet) as well as the baseboards where the carpet meets the wall. The custodian should dispose of vacuum bag immediately after vacuuming.
6. Drying the student's clothes may need to be considered if there is a dryer available at the school. This might be used temporarily while the living conditions at the home are being addressed.

## \*Sample Letters

\*When sending out a letter, attach the information sheet (Appendix E) on the back.

### **Sample Letter 1**

Dear Parent or Guardian:

A bed bug was found in room \_\_\_\_\_. The source of bed bugs often cannot be determined, as bed bugs may be found in many places including movie theaters, hotels and planes. Even though it is unlikely for bed bugs to infest a school, an inspection is being conducted and the areas affected will be treated.

Hampton City Schools will continue to work to identify bed bugs, provide inspections of the school, and have a licensed pest control specialist assist with pest management.

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 cluster 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 healthcare provider. Contact your healthcare provider or school nurse for questions regarding proper care and treatment of bed bug bites.

On the reverse side of this letter we have provided you with accurate information regarding bed bugs.

If you have any questions, please contact the school at \_\_\_\_\_ or me directly at \_\_\_\_\_.

Sincerely,

## Sample Letter 2

Dear Parent or Guardian:

A bed bug was found in your child's classroom. The source of bed bugs often cannot be determined, as bed bugs may be found in many places including movie theaters, hotels and planes. Even though it is unlikely for bed bugs to infest a school, an inspection was conducted and the areas affected were treated.

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 cluster 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.

Hampton City Schools will continue to work to identify bed bugs, provide inspections of the school, and have a licensed pest control specialist assist with pest management.

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

If you have any questions, please contact the school at \_\_\_\_\_.

Sincerely,

### Sample Letter 3

Date:

To Staff, Parents/Guardians,

The mission of Hampton City Schools is to provide optimum learning opportunities for all students in a safe, secure, inclusive learning environment that fosters personal and interpersonal growth, lifelong learning, and a strong sense of community. One of our primary goals this school year is to improve student achievement in clean, safe, orderly, and welcoming schools. We continuously monitor all aspects of the educational environment to ensure the success of all of our students.

Recently, Virginia and other states have seen an increased number of bed bug infestations plaguing residents. We want to make sure that as bed bugs infest more and more homes, they do not find their way into our schools. The source of bed bugs often cannot be determined, as bed bugs may be found in many places such as hotels, planes, and movie theaters. Even though it is unlikely for bed bugs to infest a school, Hampton City Schools will continue to work to identify bed bugs, provide thorough inspections of our schools, and have licensed pest control specialists assist with pest management.

If you have any questions regarding bed bugs in your child's school, please contact me or your child's principal.

Thank you for your continued cooperation.

Sincerely,

**Sample Connect-Ed Message**

To eliminate rumors and misinformation, we wanted to notify all parents that a bed bug was found today in the school. Please note that the source of bed bugs often cannot be determined, as bed bugs may be found in many places including movie theaters, hotels, planes and used furniture. Even though it is unlikely for bed bugs to infest a school, an inspection is being conducted tonight and the areas of concern will be treated by a licensed pest control specialist. They will also continue to work to identify any other areas of concern and provide inspections of the school and assist with pest management. All students have been given a letter and an information sheet, so please check with your student. There is no need to be alarmed at this time but we just wanted to keep our \_\_\_\_\_ Family informed.



## Bed Bug Information Sheet

### What are Bed Bugs?

Bed bugs are small, flat, wingless insects with six legs that, just like mosquitoes, feed on blood from animals or people. They range in color from almost white to brown, but they turn rusty red after feeding. Bed bugs are ¼ to 3/8 inches long. They get their name because they like to hide in bedding and mattresses. Unlike some other pests, bed bugs do not transmit or spread disease.

### Movement of Bed Bugs

Bed bugs have spread throughout the country and are present in communities regardless of housing, income level, or ethnicity of the population. Schools are not ideal places for bed bugs as they prefer to hide during the day and there are few people in the school at night when bed bugs feed. So, how do they come to school? They can get into schools in a variety of ways:

- From “hitchhiking” in on clothing, backpacks, computer bags, books, stuffed toys, lunch boxes, etc.
- From infested items (e.g. furniture, clothing) that have been donated or brought into school
- From those who have stayed at hotels, motels, and other residences or traveled on cruise ships, planes, etc.

Often, the school system will not know how the “unwanted pests” are introduced to the school environment.

### Prevention Methods

Bed bugs feed on people. They do not infest people. They are “hitchhikers”. They are very much like mosquitos, which feed and then move off the body to find shelter. The following are some prevention strategies which may be done weekly or more often as necessary:

- Encourage your child to empty their backpacks outside of the home and inspect all items as they are removed. Put the child’s backpack and coat in the dryer on **high** for 30 minutes to kill bed bugs and eggs.
- Vacuum floors and furniture regularly, discarding the vacuum bag when you are done directly to the outside.
- Encourage your child to keep backpacks and coats out of the bedroom and off the bed and couch.
- Encourage students to take homework assignments out on a table or desk, not the bed or couch. You can consider isolating backpacks in a sealed plastic bag or a sealable plastic container.
- Inspect mattresses for signs of bed bugs at home and when traveling

### Treatment

If there is evidence of bed bugs in your home, it is recommended that you call a professional pest control company. While bed bug bites are not typically serious, the sooner you address a potential infestation in the home, the more likely you will be able to eliminate the bed bugs completely.

Hampton City Schools will take action as soon as a bed bug has been identified. We will notify our licensed pest control specialist to inspect and treat. They will provide the school system with the appropriate pest control management plan to address the situation.

### For More Information

<http://www.cdc.gov/parasites/bedbugs/faqs.html>

<http://www.epa.gov/opp00001/bedbugs/index.html>

<https://cchealth.org/bedbugs/pdf/2016-protect-yourself-and-home.pdf>

