



CIMEX LECTULARIUS (BED BUGS) PROTOCOL IN CLIENT'S AND STAFF HOMES WRHA/WIS COMMUNITY HEALTH SERVICES

Preamble:

Bed bugs have been found in the homes of some clients visited by staff from various WRHA/WIS programs. The following information and algorithm is to assist staff and their supervisors to understand and deal with these occasional infestations.

In the past decade, bed bugs have been making a comeback across North America. International travel, commerce and changes to pesticides registered in Canada are thought to facilitate the spread of these insect hitchhikers. Adult bed bugs, nymphs and eggs, are readily transported in luggage, clothing, bedding, and furniture. Bed bugs are most frequently found in dwellings with a high rate of occupant turnover, such as hotels, motels, hostels, dormitories, shelters, apartment complexes, tenements, and prisons. Such infestations are not necessarily a reflection of poor hygiene or bad housekeeping.

Definitions:

Bed Bugs (Cimex lectularius)

Small, reddish-brown insect. In the adult stage it is about the size of a wood tick that feeds preferentially on the blood of humans and will feed on other animals to survive. Comes from the family of six-legged 'true bugs' such as the plant bug. The adult is rusty brown in color, oval in shape and has no wings. It is about $\frac{1}{4}$ inch (6 mm) long, has a short broad head and a broad and flat body. Body grows and swells after a blood meal, and color changes from brown to dull red.

Bed Bug Precautions

Precautions implemented for a case of bed bugs.

Case Coordination in community

Professional that provides coordination of community based care, i.e. Home Care Case Coordinator, Community Mental Health Coordinator.

Client

The individual receiving care in a community setting.

Health Care Worker (HCW)

An individual who may have the potential to acquire or transmit an infectious agent during the course of his or her work in the health care workplace, i.e. nurses, Mental Health workers, direct service staff, Family First home visitors, Case Workers, volunteers and emergency responders.



Injury/Near Miss Form (INM)

To be completed by WRHA Health Care Workers/WIS employees in consultation with their supervisor to report the occurrence of any actual or potential occupational incidents.

Non occupational exposure

Bed Bugs acquired from own personal contact, not related to work duties, i.e., hotel stay, visiting a friend.

*Occupational and Environmental Safety & Health (OESH)
(WRHA employees)*

Is concerned with the promotion of health activities and prevention of illnesses and injuries related to the work environment. Occupational Health is Governed by legislated laws, occupational health and safety standards and guidelines. Consultation with OESH is required for any exposure to occupational hazards.

Occupational exposure

Bed Bugs acquired from duties of work. Determination of this contact shall be done in consultation with OESH.

*Safety and Health Unit (SHU),
Family Services & Housing (FSH)
Employees*

Is concerned with the promotion of health activities and prevention of illnesses and injuries related to the work environment. Occupational Health is governed by legislated laws, occupational health and safety standards and guidelines. Consultation with SHU is required for any exposure to occupational hazards.

Supervisor

Person to whom Health Care Worker reports.

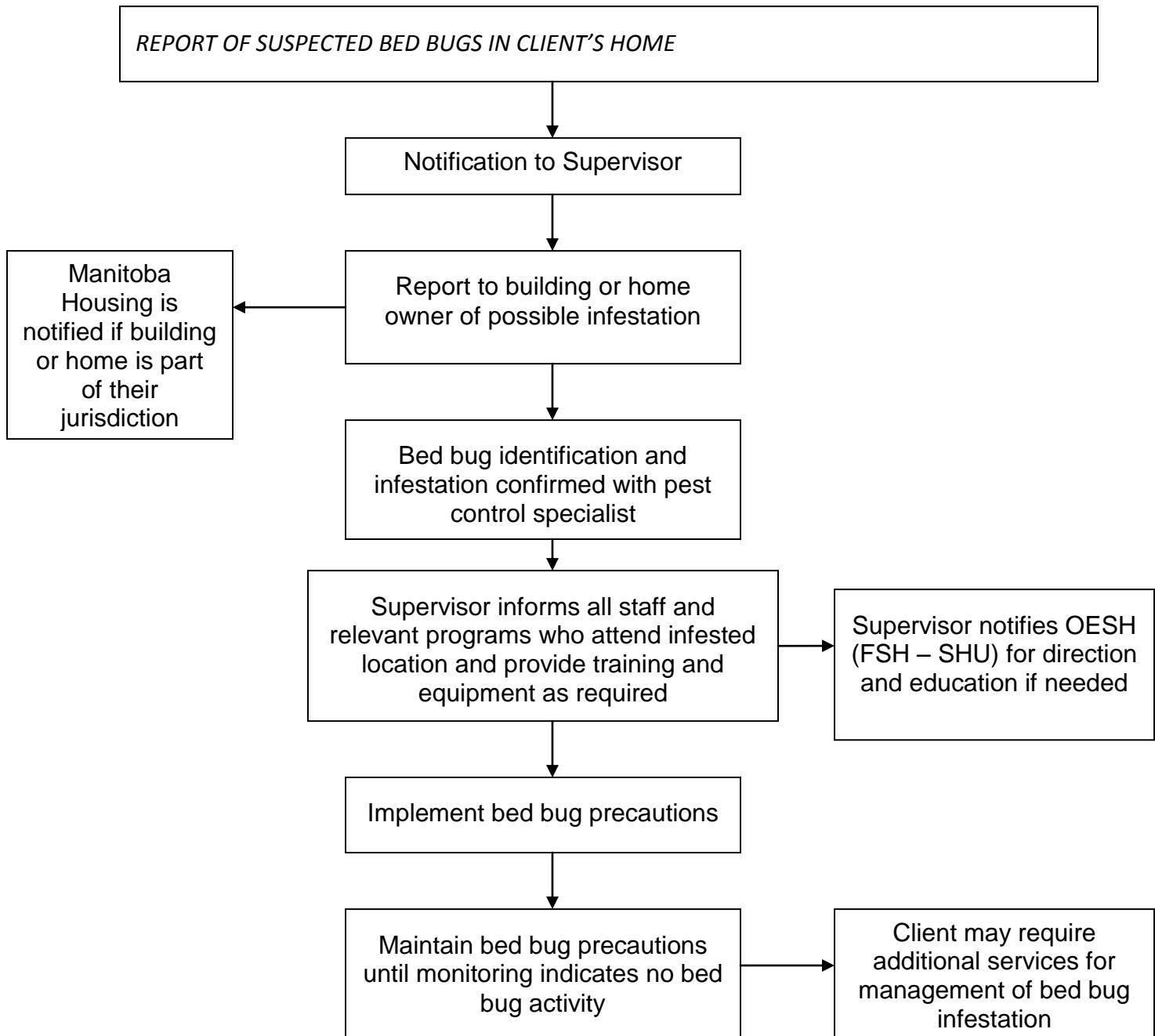
WIS – Winnipeg Integrated Services (WIS)

Integrated services between Family Services and Housing and WRHA that are person/family focused and recognize the principles of population health and primary health care.



WRHA Community Health Services BED BUGS ALGORITHM – CLIENT

**(For detailed information and management of Bed Bugs
see – FACTS About BED BUGS & Definitions)**





FACTS ABOUT BED BUGS

DESCRIPTION

The adult bed bug (*Cimex lectularius*) is rusty brown, oval in shape and has no wings. It is about $\frac{1}{4}$ inch (6 mm) long has a small head and the body is broad and flat. When engorged with blood, its body becomes elongated and swollen, and its color changes from brown to dull red.

Eggs are white and about 1/32 inch (.75 mm) long. Depending on conditions, the female bed bug lays about 200 eggs at the rate of 3 to 20 per day during their lifetime. Eggs have a sticky coating and adhere to objects on which they are laid. It usually takes the eggs 6 to 17 days to hatch and the newly emerged nymphs will feed immediately if a host is available.

The newly hatched nymphs are almost white or clear, similar in shape to the adult except much smaller. They become a rusty brownish colour after feeding as they mature. There are 5 nymphal stages, and under normal environmental conditions it usually takes 35-48 days for nymphs to mature to the adult stage. The nymph becomes swollen and the colour changes to dark red when full of blood.

Depending on environmental conditions, the adult's lifespan ranges from 12-18 months and multiple generations can occur each year. There are overlapping generations and all stages may be present at the same time. Adult bed bugs may live for several weeks and up to 12 months or more without feeding.

EVIDENCE OF BED BUG INFESTATION

- Bites, often a series of two or three welts (described as "breakfast, lunch and supper" bites), close together, are produced following a feeding (varies from person to person).
- Dark spots of faecal matter (known as 'frass') or blood on bed sheets, mattresses, etc.
- Observation of an outer shell – exoskeleton –shed and left behind when a nymph goes through its nymphal stages of growth.
- An offensive, sweet, musty odour from their scent glands may be detected when bed bug infestations are severe.

FEEDING HABITS

- Bed bugs emerge from hiding spots to feed when a host is present and may feed when it's dark or in light.
- Bed bugs prefer to feed on the blood of humans.
- Bed bugs (adults and nymphs) use their sharp beak to pierce the skin of the host; they inject saliva containing an anticoagulant that helps them obtain blood. The saliva often causes the skin to itch and become swollen.



- First instar nymphs may become engorged with blood within three minutes, whereas a full-grown bed bug usually feeds for ten to fifteen minutes.
- They then crawl away to a hiding place to digest the meal. When hungry, bed bugs again search for a host usually every 2-3 days.
- They do not stay on the host longer than it takes to get a blood meal. They do not possess any appendages designed for clinging to hair, fur or skin.

HIDING PLACES

- Bed bugs hide in many locations or protected sites. They prefer fabric, wood, and paper surfaces and are usually found close to where the host sleeps.
- Bed bugs initially can be found about tufts, seams, and folds of mattresses as well as the crevices in the bedstead and springs.
- Hiding locations include (but are not limited to):
 - Behind baseboards, under loose rugs, folds in chairs and couches and farther from the bed.
 - In heavier infestations, farther from the bed, such as window and doorframes, electrical outlets, floor cracks, and under the wall-to-wall carpeting.
 - Bed bugs crawl upward to hide in pictures, wall hangings, drapery pleats, loosened wallpaper, cracks in plaster, and ceiling moldings.
 - They may inhabit dressers, linen storage, etc.
 - Bed bugs have also been found in alarm clocks, cell phones and other electronic devices
- Movement to another location may occur if no host(s) is/are available for long periods of time. The limited mobility of the insects restricts the distance which they travel and it is believed this movement is only stimulated by the presence of a potential host in the vicinity.
- Most dispersal occurs when the host or the host bed components, bed linen, contaminated laundry or equipment relocates the insect to a new host.

DISEASE TRANSMISSION

- Bed bugs are not known to transmit human pathogens, including hepatitis B and HIV.

CLIENT HAS SUSPECTED OR CONFIRMED BED BUG INFESTATION

CLIENT VISITS

1. Try and meet clients outside of infested areas.
2. To minimize transference:
 - a. Do not bring bags, purses and coats into infested areas.
 - b. Do not store items (e.g. protective gloves, gowns, booties) in infested areas.
 - c. During visits do not place items likely to be taken out of the client's suite in areas likely to harbour bed bugs such as beds, couches or chairs.
 - d. Do not bring possibly infested items into another home.
3. Be alert to signs of the presence of bed bugs and report immediately to your supervisor and OESH/SHU.
4. Discarding of the client's items and furniture, including mattress, is another option, although new items and furniture can quickly become infested if bed bugs are still on the premises.



5. Steam cleaning of mattresses generally is not recommended because it is difficult to get rid of excess moisture, which can lead to problems with mold, mildew, dust mites, etc.
6. A hypoallergenic mattress cover rated for bed bugs may be used to encase mattresses, preventing infestation from bed bugs by reducing harbourage spots. Encasement of infested mattresses can reduce damage to the mattress from blood spots and fecal material and is effective in eliminating bugs by trapping bed bugs and subjecting them to starvation, preventing further spread of bed bugs.
7. Legs of bed may be placed in mineral oil or coated in double-sided tape as an additional preventative measure.

STAFF WORKING IN INFESTED HOME

1. If client complains of a rash or bite ask when they first noticed the rash or bite. Ask client if they have seen any insects and ask them to describe them.
2. Notify supervisors immediately as soon as bed bug infestation is suspected/confirmed.
3. Supervisor shall report possible infestations to the individual most likely to initiate steps to deal with the bugs, e.g. building owner, homeowner.
4. Confirm bed bug infestation with pest control specialist.
5. Supervisor shall inform all staff who attend the infested location and provide training and equipment as required.
6. Occupational & Environmental Safety & Health (OESH) may be contacted for direction and education (940-8386). FSH staff should contact SHU (948-3396).
7. Bed bug precautions shall be implemented for all confirmed cases of bed bug infestations.
 - These precautions are used only by staff who will have contact with client's bedding, clothing or upholstered furniture.
 - Bed bug precautions prior to providing care:
 - Disposable gown
 - High top booties with pant legs in booties
 - Gloves
 - Contact OESH if circumstances require greater protection than standard bed bug precautions.
 - Bed bug precautions prior to leaving client's home:
 - Remove gowns, booties and gloves, place in plastic bag and seal for disposal.
 - Perform hand hygiene.
 - Dispose of bag in garbage.

LAUNDRY

- If laundry needs sorting before placing in washing machine, put all laundry into the bathtub to sort.
- Place sorted laundry inside separate garbage bags for transport to the laundry room. Rinse excess bugs down the drain.
- When leaving, at the door of the client's suite remove the gloves, gown and bootees and discard in a plastic bag. Seal the plastic bag tightly and dispose outdoors in the garbage or in a designated dumpster. Perform hand hygiene.
- Once at washing machine, put on gloves and dump laundry directly into washing machine from plastic bag. Remove gloves and perform hand hygiene.
- Launder all linen in hot water and dry in hot dryer.



- After linen is cleaned and dried, place in a tightly sealed container or bag until the client's home has been treated by pest control services.

STAFF TRANSPORTING IN THEIR VEHICLE CLIENTS WHO HAVE KNOWN BED BUG INFESTATION IN THEIR HOME

If you are transporting a client in your car:

- Place a bed sheet over the passenger seat. After delivering the client, roll the bed sheet into itself.
- If transporting additional clients, shake the bed sheet outdoors and replace.
- Once transport is completed for the day, place sheet in plastic bag to be laundered.
- Avoid storing bags, purses, and coats inside car or trunk.
- Vacuuming of car upholstery should be done occasionally. A stiff brush can be used to scrub the seams and crevices to dislodge bed bugs and eggs prior to vacuuming.

CLIENTS COMING INTO RESIDENTIAL FACILITIES OR DAY PROGRAMS

- Inform clients and individuals referring clients that only one bag or piece of luggage should be brought to the unit, and if possible, change(s) of clothing should be kept to a minimum and transported to the unit in a sealed plastic bag.
- Upon arrival to the unit, client clothing should be removed from their bag and placed directly into the washing machine. Plastic bag is to be disposed of in waste receptacle.
- If washing machine is not available, place contents of plastic bag into clean plastic bag, being careful to tie it off. Store in client storage area for duration of client visit.
- If the client is using a luggage bag, the bag should be placed in a plastic garbage bag, tied off, and placed in client storage area for the duration of the admission.
- Provide the client with clean clothing.
- If shower facility is available provide client with necessary toiletries, and ask the client to take a shower, placing all clothing on their person into a plastic bag, being careful to tie it off.
- If no shower facility available, ask client to change to clean clothing, placing all clothing on their person into a plastic bag, being careful to tie it off.
- If washing machine available, all clothes should be washed at a high water temperature and ensure clothes are completely dried at high temperature. Clothing requiring sensitive washing should be bagged and stored in the client storage area and should not be worn during admission.
- Outdoor clothing should not be laundered. All footwear and outdoor clothing should be bagged in a plastic bag and stored in client storage area for the entire admission.
- Should the client have visible marks on their skin indicative of bed bug bites, a note should be placed on their file (chart) indicating the time frame when the bed bug bites were noted by staff or referral source.



CLIENTS VISITING PRIMARY CARE SITES OR ATTENDING INTERVIEW TYPE APPOINTMENTS

- Clients with visible evidence of bed bugs on their person or who have a history of bed bug infestation should be placed in a room designated for interviewing bed bug infested clients
- Room should be prepared as follows:
 - Room should not contain any upholstered furniture
 - A hall tree should be available for hanging coats, bags, etc. on
 - Double sided tape should be applied to baseboards around perimeter of room to seal opening between baseboard and flooring, and baseboard and wall.
 - Double sided tape should be applied along sides of door frame, across top of door frame and across threshold of entryway
 - Double sided tape should be applied to legs of tables and chairs
 - Items stored in room should be kept to a minimum or sealed in plastic bags
 - Flooring and furniture should be vacuumed after client leaves and vacuum bag or contents of hopper placed in plastic bag and sealed for disposal

ORDERING SUPPLIES

1. Information on specific supplies required/approved for bed bugs shall be provided by OESH/SHU.
2. An adequate amount of appropriate supplies shall be maintained in each community office and After Hours Unit for emergency use.
3. Once a specific client has been identified, supplies are ordered for that specific client for delivery to the office site and are picked up at the office site by the Direct Service Staff.
4. Do not store items (such as gowns, gloves and bootees) in infested areas.
5. Community sites will be responsible to identify options for alternative storage and emergency access storage when there are major infestations in large blocks. Supplies should not be stored in common area without special packaging.
6. Supply utilization committee will track bed bug supplies.
7. Do not bring items that may be infested into another home.
8. Current specific supplies (WRHA programs):

Item	SAP
Disposable gloves	As per gloves guidelines
Disposable gowns	11059
Disposable bootees	11177
Disposable bootees – high top	39871

For FSH employees – contact SHU for order information.

MANAGEMENT OF BED BUGS

PREPARATION FOR MANAGEMENT

Individuals with bed bugs in their home may be given the following information:

In order to enable the service technicians from the exterminator company to apply an effective environmental treatment, the following instructions must be performed no more than one day before treatment application.



BEDROOMS: ALL BEDDING (linens, sheets, pillowcases, blankets, pillows, comforters) should be removed. ALL CLOTHING AND SHOES should be removed from dressers and closets. Launder items that cannot go directly into a dryer, in hot water or place in dryer for 15-20 minutes on high heat. All washed or dried articles should be placed in closed green garbage bags. The mattress and box spring should be thoroughly vacuumed (throw out vacuum bag upon completion) and placed upright beside the bed.

LIVING ROOM: All furniture and all items should be moved 2 feet from the walls. Items should not be placed on the couch, chairs or beds. Any couch/chair covers should be removed and washed. Chairs, couches, stools etc. should be thoroughly vacuumed. Remember to throw out all vacuum bags following vacuuming of these items by placing the used vacuum bags in the outdoor garbage receptacle.

KITCHEN: Ensure all food is kept in the fridge or in sealed plastic containers. All dishes, silverware, cooking utensils should be removed from the countertops, stoves and table tops and washed in hot soapy water and returned to the cupboards and drawers.

STORAGE AREA AND CLOSETS: All items should be removed from the shelves in the storage area and closets and covered with plastic.

BIRDS AND PETS: Birds and pets must be removed from the premises and fish tanks must be covered to prevent any possibility of poisoning.

PLANTS: Remove plants from suite or cover with plastic to protect during spraying.

GENERAL:

1. All towels and bath rugs should be removed and washed in hot water or placed in hot dryer for 30 minutes.
2. All floors should be thoroughly vacuumed and cleaned behind baseboards, cracks, electrical plugs, switch plates and wall hung pictures. All garbage and used vacuum bags should be discarded in sealed garbage bag.
3. Upon re-entry fresh clean linens should be used on bed(s).
4. Mattress may be sprayed with a product approved by a pest control specialist for this purpose. Mattresses should be sealed in hypoallergenic mattress cover after spraying.
5. Steam cleaning of mattresses generally is not recommended because it is difficult to get rid of excess moisture, which can lead to problems with mold, mildew, dust mites, etc.

CONTROL

- A professional pest control specialist should be enlisted to ensure safe, effective control of a bed bug infestation.
- A thorough inspection of the area of infestation must be carried out before proceeding with control procedures.
- All potential daytime hiding spots must be located and treated with a low hazard insecticide registered for this purpose.
- If the use of chemicals is an issue, a pest control specialist can provide information regarding non-chemical control methods.



- In hotels, apartments, and other multiple-type dwellings, it is advisable to also inspect adjoining units, units on each side, above, across and below, since bed bugs can travel relatively long distances.
- Cracks should be repaired in plaster and loosened wallpaper glued down to eliminate bed bug hiding locations.
- It is not advisable to spray pant legs and shoes with insecticide prior to exposure to bed bugs. Chemical exposures are an occupational hazard and some employees may become sensitized to the chemical components causing distressing physical symptoms.

RE-OPENING THE SITE/ROOM FOLLOWING APPLICATION OF PEST CONTROL TREATMENT

After the site/room has been treated the following measures shall be taken prior to admitting clients:

- Walls, bed frames, dresser tops, etc. should not be washed down for fourteen days, as this will remove the residue that will kill bed bugs that were not killed by the initial spraying.
- Floors may be vacuumed, as this will not affect the residual effect of the treatment.
- Fourteen days after treatment all rooms may be cleaned as normal.
- If another live bed bug is found after treatment, it should be reported to the building site manager or the pest control specialist for re-treatment.

SAFETY INFORMATION AND PEST CONTROL PRODUCTS

- The pest control company shall provide Material Safety Data Sheets (MSDS) for insecticide used.
- The employer shall ensure all workers who will be entering the treated areas have received training regarding the hazards and protective measures they are to follow.
- The employer shall provide personal protective equipment as required including proper fitting, training in care and use and any related training.

STAFF WHO HAVE SUSPECTED/CONFIRMED BED BUG INFESTATION IN THEIR HOMES

STAFF:

1. This section is currently under construction. Contact OESH for further directions.