

### **Bed Bugs (*Cimex lectularius*)**

#### **Related Standards & Resources:**

1. Infection Control Manual - [Standard Precautions](#)
2. Infection Control Manual - [Contact Precautions](#)

#### **Skill Level:**

**Basic:** within the scope of practice of every nurse (RN, RPN or LPN)

#### **Need To Know:**

##### **Bed Bugs**

In the last decade, bed bugs have been increasingly encountered in homes, apartments, hotels, motels, dormitories, shelters and modes of transport. As such, they are occasionally transported into hospital and other health care environments.

Bed bugs belong to the insect order Hemiptera, most of which are winged insects adapted to sucking plant sap. One family of this order, Cimicidae, has evolved as wingless, blood-sucking parasites on warm-blooded hosts. There are 91 species in this family of ectoparasites (parasites that live on the exterior of the host organisms). Most of these species live in the nests of either birds or bats but two species have evolved as ectoparasites of humans – the common bed bug, *Cimex lectularius*, and the tropical bed bug, *Cimex hemipterus*.



<http://en.wikipedia.org/wiki/Image:Bedbug1.JPG>

#### **Life Cycle**

Female bed bugs deposit 1 to 7 eggs per day usually after feeding. They are fastened with a cement-like substance to cracks and crevices or rough surfaces near adult harborages. Each female can lay 100 to 300 eggs in a lifetime. The eggs are visible to the naked eye measuring 1 mm in length (approx. 2 grains of salt) and are a milky-white tone in color. The eggs hatch in approximately 10 days. The newly emerged nymphs will feed immediately. After getting a blood meal, the nymph turns red or purple in color because of the blood in its body. A bed bug goes

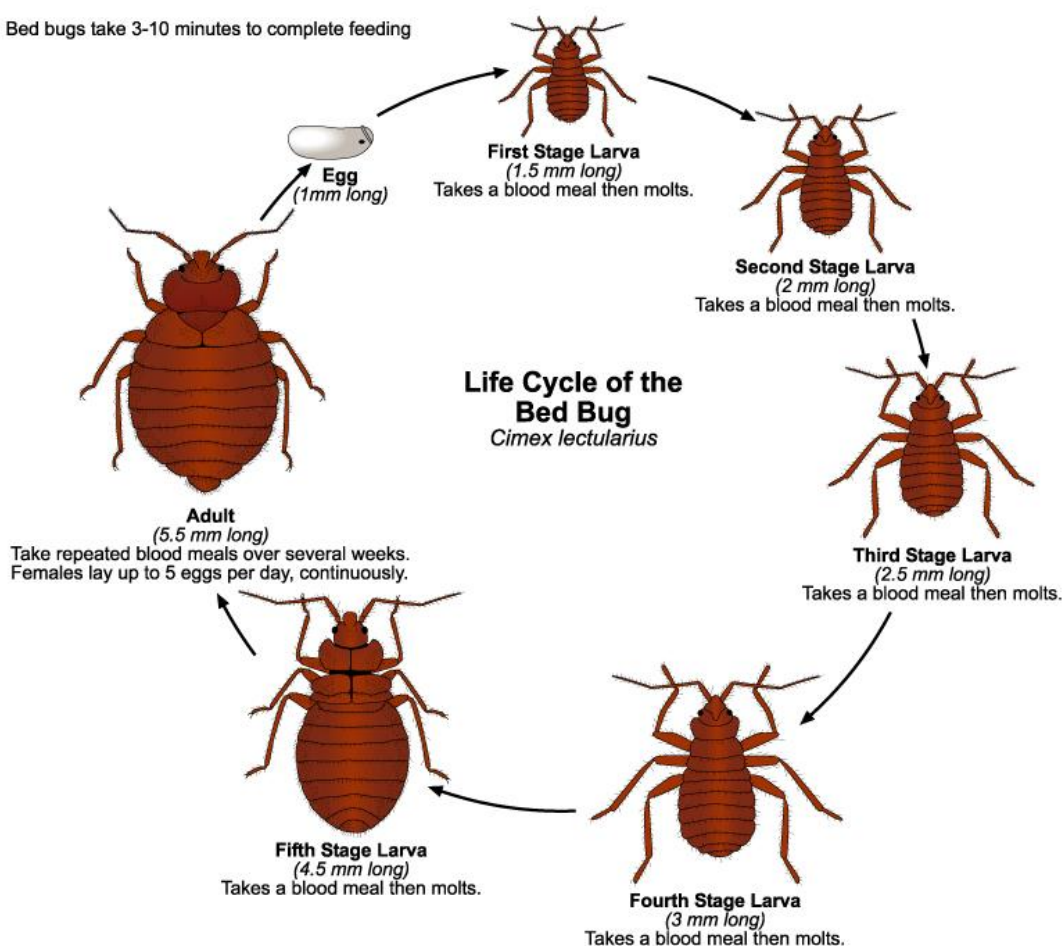
through five molts (shedding of its skin) before it reaches maturity in 35 to 48 days. Each stage requires a blood meal. Adult bed bugs can survive for several months without a blood meal and have been known to live in abandoned houses for 1 year.

**Adults** are light tan in colour turning reddish-brown after feeding on blood. They are oval, flattened insects from 1 to 7 mm long and 1.5 to 3 mm wide before feeding. Though wingless, adult bed bugs do have small wing pads. The eyes are deeply pigmented and the sides of the collar-like pronotum curve slightly around the head.

**Egg** -- The white, oval egg is about 1 mm long.

**Nymph** -- The five nymph instars resemble the adult though they are smaller in size. A newly hatched nymph is almost colorless. Engorged nymphs are reddish and swollen.

**Note:** Bed bugs take 3-10 minutes to complete feeding



[www.pestcontrolcanada.com](http://www.pestcontrolcanada.com)

### Bites and Concerns

The discovery of bed bugs is a concern for many reasons. First, the nocturnal blood-sucking habits of the bugs induce anxiety, worry, stress, and sleeplessness for those infested. The initial bite, though usually painless, may develop into a welt that remains itchy for weeks. Bed bugs usually bite people at night while they are sleeping. They feed by piercing the skin with an elongated beak through which they withdraw blood ([video](#)). Engorgement takes about three to 10 minutes, yet the person seldom knows they are being bitten. Symptoms after vary with the individual. With scratching and subsequent infections, welts can develop into severe skin conditions.

It is believed that the bite from a bed bug causes an allergic response. Many people do not have a reaction to the first bite. As with allergic reactions, the reaction to a bite can become progressively worse over time. Welts and itching are often attributed to other causes such as mosquitoes. For these reasons, infestations may go a long time unnoticed, and can become quite large before being detected. The possibility of bed bugs increases if the affected individual has been traveling, or had acquired used beds or furnishings before symptoms started to appear. Bed bugs also are suspect if you wake up with itchy bites you did not have when you went to sleep. Conversely, it is important to recognize that not **all** bites or bite-like reactions are due to bed bugs. Confirmation requires finding and identifying the bugs themselves, which often requires the help of a professional.

### Communicability

A common concern with bed bugs is whether they transmit disease. While bedbugs have been known to harbor pathogens in their bodies, including hepatitis B, they have not been linked to the transmission of any disease and are not regarded as a medical threat. Some individuals, however, can get skin infections and scars from scratching bites. Their medical significance is mainly limited to the itching and inflammation from their bites. Antihistamines and corticosteroids may be prescribed to reduce allergic reactions, and antiseptic or antibiotic ointments to prevent infection. Infestations also may cause anxiety, embarrassment, and loss of sleep.

### Route of transmission

Bed bugs do not fly but can crawl very quickly. They are generally transported on luggage, clothing, beds, furniture, etc. Bed bugs are very resilient and can survive months without feeding.

## PRACTICE GUIDELINE

### Assessment and Interventions:

#### Signs of an infestation

Bed bugs are most active at night, coming out to feed at night and hiding in cracks and crevices during the day. Bed bugs do not have nests like ants or bees but tend to congregate in habitual hiding places. Bed bugs prefer to hide close to where they feed, however, if necessary, they will crawl more than 100 feet to obtain a blood meal. Most infestations start around beds and spread throughout a room and beyond.

During the early part of an infestation bed bugs are found about the tufts, seams, and folds of mattresses and bed covers; later they spread to cracks and crevices in bed frames and box springs. If allowed to multiply, they establish themselves behind baseboards, window and door casings, pictures, moldings, and in furniture, loosened wallpaper, and cracks in plaster and partitions. A frequent sign is staining caused by their fecal matter. It appears as if the surface of the mattress has been touched with a felt tip marker.

**Interventions:**

See [algorithm](#)

For patients in the emergency department who have suspected bed bugs and require transfer to a unit, place that patient in a private room if possible until the source of the bug is confirmed and treatment is complete.

Any decision to treat a room, evacuate a room or replace equipment will be made in consultation with the unit staff involved, the unit leader, Housekeeping, Pest Control and Infection Prevention and Control as required. Recommendations on how to proceed will be made to the user. The final decision on whether to enact those recommendations rests with the user or the Leader on Call.

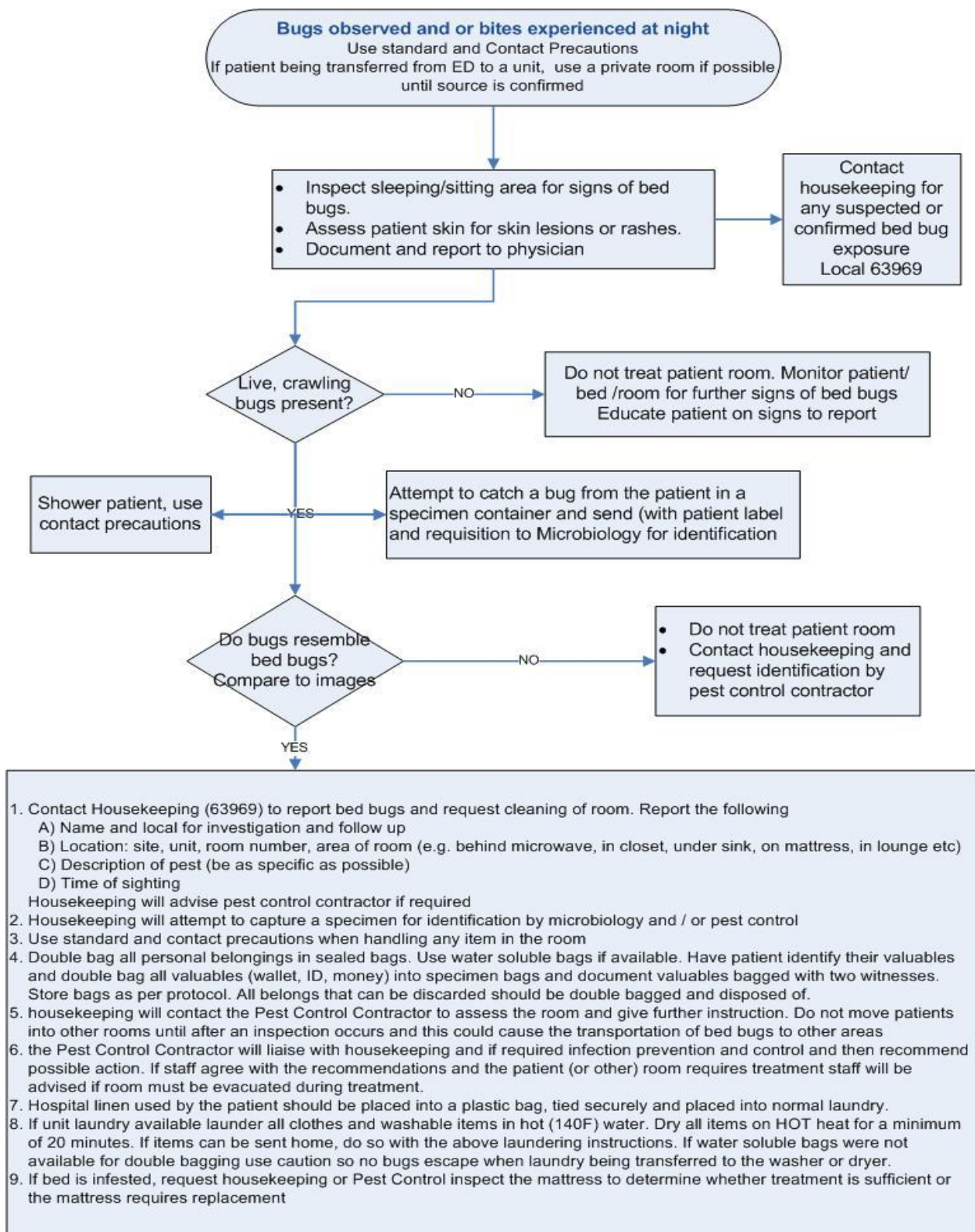
Health care workers must use **Contact Precautions** for any direct patient contact when a patient arrives with any kind of insect or bug found on their skin, on their belongings or who is assessed to have skin lesions that are suspected to be caused by bed bugs, lice or scabies. **Contact Precautions** should be maintained until the bug or cause of the skin lesion is identified and the appropriate treatment and containment can then be followed. **Patients should be instructed to not remove any belongings from sealed bags until instructed it is safe to do so.**

Housekeeping may be contacted at anytime for assistance.

The Microbiology Laboratory at St Paul's Hospital (SPH) performs limited identification of ectoparasites, like bed bugs and scabies, when found **on** a PHC patient. If identification is required, collect the organism and place in a specimen container. Label the container and complete the appropriate requisition with a patient identification label before sending to the laboratory.

If assistance is required with the process or where the type of bug is not clear (bed bug, lice, scabies, etc) consult Infection Prevention and Control.





**Patient and Family Resources:**

VCH Guide to Bed Bug Control. Also available in Chinese and Vietnamese

**Documentation:**

Document all assessments and interventions in the Interdisciplinary or Nurses Notes.

Ensure communication of plan in Care Plan or Care Guide.

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**Persons/Groups Consulted:**

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