BED BUGS (CIMEX LECTULARIUS) Protocol

Bed bugs are an infestation and not considered the cause of infections. Infestations require Housekeeping Services and Facility Management to take the lead in pest control with the support of Infection Prevention and Control & Occupational Environment and Safety Health (OESH). To confirm an infestation of Bed Bugs, a pest control professional must be consulted.

1. Cause/Epidemiology

Bed bugs are caused by the parasite *Cimex lectularius.*

A bed bug's lifespan is approximately 10 months. Bed bugs can survive without feeding for long periods of time – typically 80 to 140 days. On rare occasions, adult bed bugs have been able to survive up to 550 days without food. It is also possible for bed bugs to survive in temperatures from –15 °C to 25 °C.

2. Background

Bed bugs are oval, flattened, brown and wingless parasites approximately 6 mm long (¼ inch) and are visible to the naked eye. Bed bugs are mainly active at night, appear similar to wood ticks, and hide during the day in dark, protected areas. Bed bugs cannot fly or jump and are able to enter into extremely small locations due to their flattened bodies.

Following a meal, the bed bug's color will change from brown to purplish-red and appear engorged. After a blood meal, bed bugs may deposit fecal spots (composed of digested blood) in areas adjacent to the feeding site or back at their hiding places (e.g. mattress seams, bed frame). In severe cases, an offensive, sweet and musty odour may be detected.

Areas where patients stay for long periods of time have the potential for attracting bed bugs. Overnight patients/visitors are more likely to bring luggage and personal effects. These longer stay areas should be more closely monitored during routine cleaning to ensure bed bugs did not make their way into these areas. Units/locations where patients are admitted as temporary residents are another common area for bed bug activity.

3. Clinical Presentation

Bed bugs do not live on people, but only use them to feed. When feeding, bed bugs pierce the skin, injecting saliva containing an anticoagulant and an anesthetic-like substance. The injected substances cause the skin to become irritated and inflamed; however the patient often remains undisturbed when bitten. Bed bug bites may be observed in linear groups of three (i.e., 'breakfast, lunch, dinner' pattern). Lesions range from erythematous pruritic macules in previously unexposed patients, to pruritic papules, wheals, vesicles, or bullae in previously exposed patients.

4. Exposure

Exposure occurs through direct contact with a bed bug infested environment, person, or infested laundry.

5. Transmission

There is currently insufficient evidence to suggest bed bugs are vectors for disease and are not known to transmit human pathogens, including blood borne infections. Local infection of bites can occur as a result of scratching the area of the bite.

Bed bugs often live in human bedding during the day and feed on the bed's occupant at night. Bed bugs prefer to live in dark, hidden cracks in close proximity to people and are found in the tufts, seams, buttons and folds of mattresses and mattress covers, bed frame headboards and items near the bed, especially those made of wood, paper, or fabric. As the infestation progresses, bed bugs are found in baseboards, window and door casings; pictures and picture moldings; furniture; loosened wallpaper; cracks in plaster and partitions; and in couches and stuffed chairs.

6. Infection Prevention and Control Practices

Inspect the patient carefully (i.e., head-to-toe) and their clothing and belongings for any insects.

Follow Routine Practices for a patient who states they have been exposed to *Cimex lectularius* (Bed Bugs) or is known to reside in an infested environment.

Implement Contact Precautions when more than one bed bug is found on clothing or personal effects. Contact Precautions may be discontinued when both:

- The patient has bathed (if possible) and
- Clothing and personal effects have been laundered or sealed in a bag
- The area has been cleaned by Housekeeping Services

Refer to Routine Practices and Additional Precautions sections for specific information.

Consult Facility Management/Housekeeping departments whenever bed bugs are identified. Facility Maintenance and/or Housekeeping departments are responsible to consult with pest control professionals if required. If the patient has recently attended other areas of the hospital as part of this visit, immediately advise those departments and Housekeeping Services so all necessary actions can be taken.

Additional measures may be considered dependent on an assessment of the environment. If the patient is unable or does not wish to change into a hospital gown during hospital visit a plastic cover is placed over the treatment chair or bed. Double sided tape may be placed around the perimeter of the chair or bed (see Appendix B). Upon transfer or discharge, sticky tape and plastic cover should be removed and discarded into a garbage bag. Seal the garbage bag and place it in the soiled holding area.

Bedding. Seal patient's bedding in a plastic bag and launder as per routine hospital laundry protocol.

Clothing. Until personal clothing and fabric items are taken home with family, seal in plastic bag. Instructions to wash clothing in hot water (> 60 °C or 140 °F) and laundry detergent must be communicated to patient and/or family. This includes drying items on high heat (>40 °C or >104 °F) for a minimum of 30 minutes. The dryer must reach a temperature of >40 °C to kill ALL stages of bed bugs, and should be filled to only 50% of capacity. If items must remain in the hospital, seal personal fabric effects in a plastic bag for entire admission or launder on-site if applicable. Storage of sealed bag will be determined on a site by site basis.

Environment. The following measures will be conducted by Housekeeping and pest control experts:

Clean and disinfect the patient room environment with a facility approved disinfectant. A strong suction vacuum should be used to clean all areas of the patient's mattress. Dispose of vacuum bag. If bed bug monitoring provides further evidence of bed bugs, equipment and the bed of the patient room should be steam cleaned whenever possible.

If the patient remains in-hospital, ongoing monitoring of both patient and environment must occur according to pest control recommendations. Assessment of the environment is the responsibility of Facility Management/Housekeeping. If patient is discharged, notification to healthcare providers should be a part of discharge planning.

7. Occupational Health

Contact Occupational and Environmental Safety and Health (OESH) for staff assessment and/or concerns at: http://www.wrha.mb.ca/staff/safety/policies.php

8. Acknowledgements:

8.1. Bed Bug (Cimex lectularius) Infestation Prevention Protocol. 80.220.017. (2011).Health Sciences Centre. Availalble at: http://hschome.hsc.mb.ca/policies/wordpolicies/80.220.017.pdf

8.2. Cimex Lectularius (Bed Bugs). (2015, October 29). Winnipeg Regional Health Authority (2015). Long Term Care Infection Prevention and Control Manual. Available at: http://www.wrha.mb.ca/extranet/ipc/files/manuals/ltc/BedBugDSP.pdf.

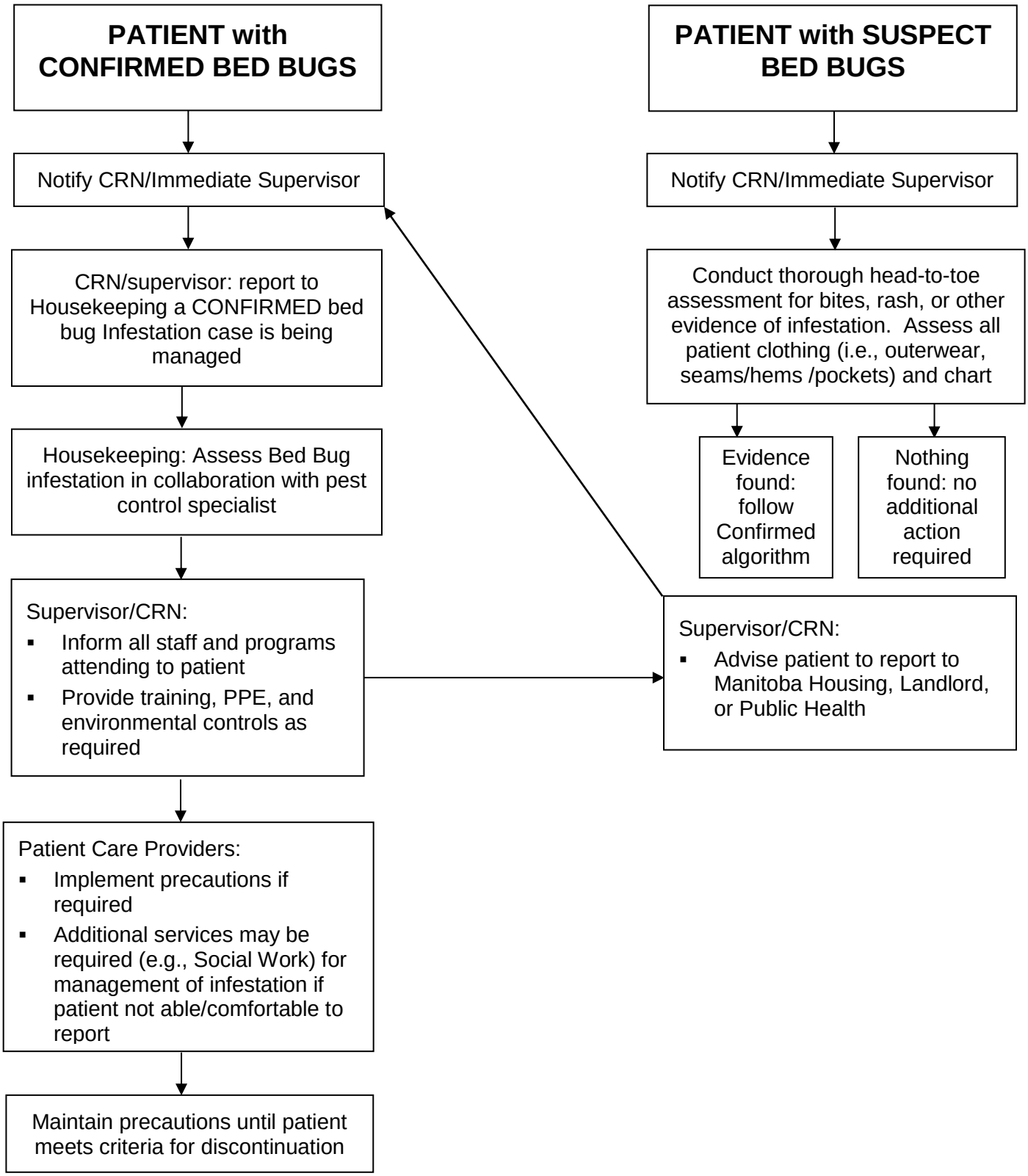
8.3. Cimex Lectularius (Bed Bugs) Protocol in Client's and Staff Homes WRHA/WIS Community Health Services. (2011, November). Winnipeg Regional Health Authority Community Infection Prevention and Control Manual. Available at: http://www.wrha.mb.ca/extranet/ipc/files/manuals/community/6.1.4.pdf.

9. References:

9.1. All You Ever Wanted to Know about German, American and Brown Banded Cockroaches. Bug Day Presentation. (2015, October 20). Expert opinion: Taz Stuart, MSc.

9.2. Bed bugs in healthcare settings. (2012). *Infection Control Hospital Epidemiology*, 33(11), 1137-1142. Munoz-Price LS, Safdar N, Beier JC, Doggett SL. Available at: https://www.medicine.wisc.edu/sites/default/files/bed_bugs_in_healthcare_settings_Safdar.pdf.

Appendix A
BED BUG MANAGEMENT ALGORITHM



Appendix B

Some areas of the hospital may require double sided tape and plastic. The following steps may be applied:

1. Place double sided tape around the immediate area where the patient will be sitting/ lying. Place and maintain double sided tape around the perimeter of the room/area.
2. Replace tape when it becomes soiled, has lost its stickiness, or as necessary.

3. Drape the plastic sheeting over the chair, examination table, or bed ensuring all surfaces are covered; then press the sheeting onto the double sided tape.
4. If required leave one area of the sheeting unsealed to allow access of other equipment (e.g., Hoyer lift)

5. Contact Housekeeping for discharge cleaning or assistance with tape removal.