Situation:

This document will help you and decision makers to better understand the basic infection control principles of controlling the transmission of Public Health Pests such as Scabies, Lice and Bed Bugs in both healthcare settings and community settings.

Scabies:

Scabies is an infestations of the skin caused by a mite, *Sarcoptes scabiei*. Infestation is common, found worldwide, and affects people of all races and socioeconomic status without regard to age, sex, or standards of person hygiene. Scabies mites are transmitted by direct skin-to-skin contact (lasting 15 – 20 minutes) and can spread rapidly under crowded conditions such as hospitals, institutions, child-care facilities, nursing homes and homeless shelters. Indirect transfer from clothing, towels or bedding can occur only if infected people have contaminated these items immediately beforehand. The scabies mite can only live for 2 – 4 days away from the human body although high temperatures will kill them more quickly.

The most prominent symptom of scabies is intense itching, particularly at night. The scabies mites cause the itching as they burrow under the top layer of skin to feed and lay eggs. Symptoms will appear two to six weeks after contact in people who have never had scabies before. Scabies mites are usually found between the fingers, on the front of the wrists, and in the folds of elbows, wrists, armpits, buttocks and genitalia.

Individuals infested with scabies mites should be excluded from childcare, school or work, and may return on the day following treatment. All close personal contacts (family members, sexual partners) of the infected person should also undergo treatment. Treatment includes the use of an insecticidal cream, lotion or solution prescribed by a medical practitioner. Clothing, bedding and linens used 48 hours prior to treatment should be washed in hot water (at least 60°C) and dried on high heat in a clothes dryer.
Articles that cannot be washed should be sealed in a plastic bag for 5 days. Transmission of the scabies mites via furniture is unlikely, however, mattresses and inanimate objects should be disinfected using a hospital grade disinfectant and upholstery or carpet should be brushed and vacuumed.

**Lice (Head, Body & Pubic):**

Pediculosis is an infestation with any of the three species of lice: *Pediculus humanus capitis*, *Pediculus humanus corporis*, and *Phthirus pubis* causing human head lice, body lice and pubic/crab lice respectively. All three infect humans only and are more often localized to one part of the body.

Head lice are a social pest and are rarely a threat to health. They are not long-distance travelers, and they are poorly adapted to life away from the host. Although adept at moving from hair to hair, they cannot jump nor can they crawl great distances to re-establish. Head lice move from person to person primarily by direct hair-to-hair contact, and less frequently through shared combs, brushes, hats etc. Head lice may also be transmitted through shared bedding (ie pillow cases). Transmission usually involves the active stages (nymph or adult) of the louse and requires the transfer of at least one viable, fertilized female or one of each sex for re-infestation. The adult or nymph louse cannot live away from the host for more than a few days. Under normal conditions, the survival time is most likely measured in hours. Eggs can survive longer off-host (a week or more), but the hatched nymph must come in contact with human head hair almost immediately or it will perish. No extraordinary environmental controls are necessary. Bed linens, headgear and towels should be washed with hot water and environmental surfaces should be cleaned thoroughly to remove any lice that may have been shed from the infected person.

Body lice are normally associated with crowded and unhygienic living conditions but are also transmitted through any close contact with an affected person. Body lice are similar to head lice but the region of occurrence is important in their identification. They are found mainly in clothing, often in the seams, but also on the body surface, especially the armpits and around the waist. Body lice can be transmitted in clothing and bedding as well as by close physical contact. Clothing and blankets recently used by an infested person should be laundered in hot water (greater than 60°C) and preferably tumble-dried or ironed with all seams turned outwards. Items that cannot be laundered or dry-cleaned can be ironed paying special attention to seams, creases and under buttons. Environmental surfaces should be cleaned thoroughly to remove any lice that may have been shed from the infected person. Unlike head lice, body lice visit the human body only to feed and spend the rest of time in clothing or bedding where they lay their eggs. There is therefore, no need to treat the person infested.

Pubic lice are not associated with the spread of disease but their bites can cause irritation. Scratching of the irritation may lead to localized infection. Pubic lice are transmitted mainly by close body contact, including sexual activity and occasionally, by clothing, bedding or towels recently used by an infected person. Avoid close body contact with
the affected individual until after treatment is completed and avoid sharing their clothing, bedding or towels. Treatment includes insecticidal creams or lotions as prescribed by a medical practitioner. Clothing bedding and towels used while the infestation was present should be washed in hot water and tumbled dry if possible. Dry-cleaning can also be used. Items that cannot be laundered or dry-cleaned should be ironed or sealed in a plastic bag for four days. As with head and body lice, environmental surfaces should be cleaned thoroughly to remove any lice that may have been shed from the infected person.

**Bed Bugs:**

Bed Bugs (*Cimex lectularis*) are not usually associated with transmission of disease, but are annoying to humans because of the intense irritations caused by their bites. They live and lay their eggs in folds and seams of bedding, cracks and crevices of furniture, walls, loose wall-papers and floors, and in close proximity to human or animal sleeping areas. Bed Bugs and their eggs are sensitive to extremes in temperature and will not survive in environments above 36°C or below 9°C. Bed Bugs can survive for up to twelve months without feeding and can be transported from place to place in luggage, backpacks, sleeping bags, bedding and furniture. Infested areas can be treated with an insecticide. Cleanliness is important for both prevention and control. Remove all visible dirt and vacuum the area.

**Prevention and Control of Pests using Disinfectants:**

Routine cleaning and disinfection of the patient’s surroundings should be done daily to reduce soil load. When a patient has been discharged from a room terminal cleaning should include changing the bedside curtains. While transmission of Scabies and Lice is not associated with environmental surfaces, Bed Bugs can be transported place-to-place so cleaning and disinfection of shared equipment or items is recommended. Additionally, environmental cleaning using a good cleaner-disinfectant will remove any pests that have been shed from the infested person.

Health Canada registers low- and intermediate-level disinfectants (e.g., alcohols, sodium hypochlorite, quaternary ammonium compounds and phenolics) at recommended use dilutions can be used for environmental surface disinfection, however, Accelerated Hydrogen Peroxide based disinfectants provide superior cleaning efficacy.

**Use of AHP in the Prevention and Control of Pests:**

Accelerated Hydrogen Peroxide when used at the 0.5% concentration is very effective as a cleaner and disinfectant. While, not an insecticide, AHP carries a 30-second Broad-Spectrum Sanitizing claim that provides a 5-Log reduction (99.999% kill), a 5-minute Bactericidal claim, which provides a 6-Log reduction (99.9999% kill) and a 5-minute General Virucide claim giving a 3-Log reduction (99.9% kill) against enveloped and non-
enveloped viruses. The exceptional cleaning properties of AHP will help to remove these pests from the surface and ensure that soils and other debris are removed providing a very high degree of cleanliness.

**In Summary:**

- Scabies is transmitted by direct contact
- Lice is transmitted by direct contact and in the case of body lice by indirect contact with infested clothing or bed linens
- Bed Bugs are associated with infested fomites
- **Routine cleaning and disinfection of environmental surfaces will help to limit the spread of these pests especially when using a product that has been proven to have excellent cleaning efficacy.**
- Accelerated Hydrogen Peroxide surface and device products carry a 30-second sanitizing claim, a 5-minute Bactericidal claim and a 5-minute General Virucide Claim.
- The fact that AHP is both a cleaner and disinfectant gives it the advantage of allowing users to have similar protocols. You and your clients should have full confidence in the cleaning ability of Accelerated Hydrogen Peroxide to help in the control of Scabies, Lice and Bed Bugs.