

## Protocol for the Management and Control of Infestations

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## RELATED TRUST POLICIES

Infection Control Policy  
Protocol for the Isolation of Patients

## **Executive Summary**

This protocol details those parasites responsible for human skin infestations and those pests most likely to infest healthcare premises. Prompt recognition is important for the control and management of these infestations.

This protocol applies to all staff (temporary or permanent) **working in all the locations registered by St George's Healthcare NHS Trust** with the Care Quality Commission, to provide its regulated activities.

This also includes volunteers, contractors, students and/or trainees.

This protocol is an appendix to the Infection Control Policy. Refer to the Infection Control Policy for information on the criteria, responsibilities and systems required to prevent and control Healthcare Associated Infections (HCAIs)

## **1. Introduction**

## Infection Control Policy 2010, Appendix D, Infestations Protocol (15)

This protocol addresses the parasites that can infect human skin and pests that may infest the healthcare environment.

If possible send a louse, flea or bed bug in a universal container to the Department of Medical Microbiology, St. George's Hospital for formal identification.

Inform the infection control team if more than one patient infestation occurs in any ward/department. Please note, for infestations of the environment with insects and rodents, please follow the procedure below:

### **St George's Hospital**

**Office Hours – 9.00am to 5.00pm** (non AMW areas) Please contact the Facilities Helpdesk on ext. 1234:

- Press option 1 for Trust then
- Option 2 for Facilities Helpdesk

**Office hours – 9.00am to 5.00pm** (AMW ) Please contact the Helpdesk on ext. 4444

### **Out of Hours Service** (Trustwide)

For any out of hours emergencies please contact the Site Manager or Bed Management team via Switchboard.

Any urgent issues should be escalated to, Assistant General Manager Facilities, on ext. 1833 or 07990 526794.

### **Queen Mary's Hospital**

Please contact the Facilities Helpdesk on 0208 487 6100:

### **Dawes House**

To report problems telephone 0207 326 8860

### **Her Majesty's Prison Wandsworth**

To report problems telephone 0208 588 4437/4128 or 0208 588 4572

### **Community Clinics**

Speak to Clinic Manager / Reception to find out where to report infestations.

## **2. Human Lice**

**Human lice** are blood sucking insects found only in man. There are about 500 different species of lice but only 3 of these use humans as their host and each lives on a specific part of the body. Lice are host specific and those of lower animals e.g. dogs, cats etc. do not infest people, although they may be present transiently.

Itching is due to an allergic reaction to the saliva which lice pump into the skin before sucking blood. This allergic reaction can take up to 3 months to develop. Superficial skin infection due to scratching is common.

Lice found off the body on bedding, floors or chairs are either dead, dying or injured and are unable to crawl to another host.

### **2.1 Head Lice**



human head louse

Head lice have no preference for clean or dirty hair and can live in 1cm of hair, including eyebrows. It mostly affects children. Infestation is often asymptomatic but can cause scalp irritation and itching after a number of weeks. Older people, being less sensitive to head louse saliva, itch less than children. Head lice rapidly die when detached from the host. They may be found on bedding and furniture but are usually dead or dying and are unable to crawl to another host.

### 2.1.1 Recognition of Head Lice

The louse is a grey-brown, hairy insect, less than 6mm in length. The female lays her eggs at night when the host is still and this helps in the intricate process of gluing an egg to a hair. The egg is positioned very near or touching the scalp (normally at the nape of the neck or behind the ears) as the eggs cannot hatch below 22°C. Infestation may also occur on the eyebrows or eyelashes. The egg is pinhead sized, smooth and oval and camouflaged to match the host's skin colour. It takes 7-10 days for the egg to hatch. Eggs found 1cm or more from the scalp are always harmless, either dead or hatched; these empty shells (nits) are firmly attached to the hair and turn white. It is very important for the nurse to be able to identify live, dead and hatched eggs to prevent hours of labour nit picking when the time could be more usefully spent in tracing live lice.

### 2.1.2 Transmission of Head Lice

**Source Isolation of patients is NOT necessary, except on paediatric wards where close contact between children may transmit the lice.** Head lice are wingless and can only crawl and do not jump or fly. They can be caught only by direct head contact for approximately one minute or more with someone who is already infested. They cannot be transmitted to others on clothing or linen as they rapidly die when detached from the host.

### 2.1.3 Treatment of Head Lice

Never treat unless *living* lice can be identified. There are various parasitocidal preparations (**Dimeticone, Malathion, and Pyrethroid compounds**) available in lotion and liquid form. Please consult a pharmacist for the recommended treatment as resistance has been reported.

Hair must *not* be shampooed before application. Products should be used according to manufacturer's guidance and 2 applications 7 days apart are recommended for effective treatment (BNF 2010). Shake the bottle. Wearing disposable apron and gloves and with the head in an upright position, rub the lotion gently into the scalp, taking care to avoid the eyes. Avoid use in children less than 6 months. Keep applying the lotion until all the hair and scalp are thoroughly moistened. Pay particular attention to the areas around the ears and the back of the neck. Allow the hair to dry naturally in a warm but well ventilated room. (Do not use a hairdryer for alcohol based products). After 12 hours, or the next day if preferred, shampoo the hair in the normal manner. Rinse and comb the hair to remove dead lice and dead eggs (nits). Preferably the hair should be allowed to dry naturally but a hairdryer may now be used. Following the procedure, brushes and combs can be washed in hot soapy water. Linen

should be dispatched to the laundry in a white plastic bag followed by an outer red plastic bag. Itching will take time to cease after treatment.

Shampoos are available for treatment but they are not as effective because of the reduced contact time. Unconventional treatments are also available but their efficacy is unproven. Check contraindications before giving treatment e.g. alcohol based solutions should not be used in pregnant or breastfeeding women, small children, asthmatics or people with dermatological (dry skin) conditions. Repeated use of these chemicals may be harmful. Resistance to these agents is common and failure of treatment has been reported.

**Systematic combing, “Bug Busting”:** This involves combing wet hair with a fine tooth comb to physically remove lice. Hair conditioner or vegetable oil can be used to facilitate the process which needs to be repeated systematically every 4 days for a minimum of 2 weeks. This method is highly effective particularly in children and can be used as an alternative to insecticide lotions.

## 2.2 Crab/Pubic Lice



Crab/Pubic louse

Infestation is usually of the pubic hair but can also be found on all coarse body hair e.g. facial hair, the axillae, chest, legs, eyebrows and eyelashes if heavy infestation present. Head hair may also be affected. Pubic lice rapidly die when detached from the host. They may be found on bedding and furniture but are usually dead or dying and are unable to crawl to another host.

### 2.2.1 Transmission of Crab/Pubic Lice

**Source Isolation of patients is NOT necessary.** Pubic Lice are picked up in the same manner as hair and body lice i.e. they simply walk from one infested person to another. With pubic lice the degree of close contact required for this to occur usually, but not always, results from sexual contact and they can infest all coarse body hair. Pubic lice are not transmitted on clothing or linen as they rapidly die when detached from the host.

### 2.2.2 Treatment of Crab/Pubic Lice

Disposable gloves and a plastic apron should be worn. Carefully remove all clothing and seal together with bedding in a white plastic bag followed by a red plastic bag.

**Malathion 0.5% aqueous lotion or Permethrin 5% cream** can be used to eliminate crab lice. Follow manufacturer's advice. Two applications 7 days apart are recommended to all areas below the chin, paying particular attention to all hairy areas, and to the beard and moustache if present. Avoid use in children less than 6 months. Leave on for 12 hours or overnight allowing to dry naturally, and then wash off. Repeat application after 7 days to kill lice emerging from surviving eggs. Bug Busting may also be used.

Use cotton buds to apply treatment to eyebrows and eyelashes if these are infested. Leave for at least one hour before washing, but preferably until the next day, then wash off or bathe in the usual manner. Provide clean clothing and linen.

Check contraindications.

## 2.3 Body Lice



Body louse

The body louse is more accurately called the clothing louse because it is the only one of the three types of louse that does not actually live on the skin, preferring the cooler temperature of adjacent clothing. It is found mainly in clothing especially along the seams but also on the body surface particularly in the axillae and around the waist. Body lice are capable of surviving for limited time in stored clothing but need to return frequently to the person's body to feed and therefore do not move far.

It only affects people who are unable to change their clothing or bedding regularly e.g. vagrants and people living on the streets.

### 2.3.1 Transmission of Body Lice

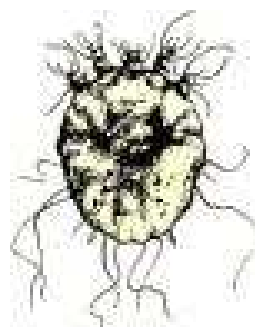
**Source Isolation of patients is NOT necessary.** This occurs in overcrowded conditions by contact with infested clothing and bedding.

### 2.3.2 Treatment of Body Lice

**No treatment of the skin is necessary.**

Disposable gloves and a plastic apron should be worn to remove all clothing and seal together with bedding in a white plastic bag followed by an outer red plastic bag. A hot wash cycle (60°C or more) must be used for any clothing washed on the ward or at home. Fifteen minutes in a hot tumble dryer kills lice and eggs. Clothing should be changed at least once a week.

## 3. Scabies



Scabies mite

Scabies is an allergic reaction to the excretion of saliva of a small mite, which burrows into the top layer of skin to lay eggs. Scabies remains infectious until treated and there may not be signs of infection for 2-4 weeks or sometimes 8 weeks after exposure. Symptoms include intense itching, which is most noticeable at night and may persist for some weeks after effective treatment, and the appearance of a hypersensitive rash. Burrows which appear as fine red wiggly lines and are generally up to 1cm long and may occur anywhere on the body but are most

commonly found between fingers and around wrists, feet and genitalia. The associated rash is usually on the wrists, elbows, breasts, waist, perineum and buttocks but in bed-bound patients may affect back, shoulders, neck and scalp. Classically, the rash appears on both sides of the body, like a mirror image. They can be transferred to other parts of the body through touch.

### 3.1 Transmission of Scabies

**Source Isolation of patients is *NOT* usually necessary (unless Crusted/ Norwegian scabies).** Scabies is not easily transmitted from person to person or spread by social contact. The mite moves very slowly and therefore person to person transmission requires prolonged skin contact of 5-10 minutes or more. Handholding or patient support for long periods is probably responsible for most scabies acquired in health care facilities. The length of time between contact and symptoms is 2-6 weeks, unless previously infected in which case symptoms may occur within a shorter period of time 1-4 days.

In elderly or immunosuppressed patients, the mites multiply rapidly and large numbers of the parasites are present; this form of scabies is often known as **Crusted/Norwegian Scabies** and is far more readily transmissible. **Patients with crusted or Norwegian scabies must be nursed in a side-room and Source Isolation until treatment has been completed.** Sheets should be regularly changed.

### 3.2 Treatment of Scabies

A dermatologist should be asked to confirm the diagnosis by skin scraping or biopsy. Topical steroids should be discontinued at least 24 hours before the treatment. **Permethrin 5% cream** is the first line treatment choice for scabies. **Malathion 0.5% aqueous lotion** can be used as a second line treatment choice if permethrin is inappropriate. However, because Malathion needs to be kept on the skin for a much longer period for effective treatment (twenty four hours for malathion versus eight to twelve hours for permethrin), permethrin may be a more practical choice of treatment to use in an institutional setting such as a care home.

Disposable gloves and a plastic apron should be worn. Place all bedding and clothing in a white plastic bag within an outer red bag. A bath should not be given before treatment as this may result in treatment being absorbed into the bloodstream too quickly and before the mites are affected.

Follow manufacturer's advice. Apply cream or lotion to cool dry skin covering the whole body including under skin creases, under nails, genitalia, palms and soles of feet, head, neck, face and ears. Reapply to hands every time they are washed during treatment period. Leave on overnight (or for the manufacturer's recommended time period), then wash or bathe in the usual manner and provide clean clothing and linen. **Two applications** are recommended 7 days apart.

Patients with **Crusted/Norwegian scabies** may require more than 2 applications depending upon severity of infestation, on consecutive days to ensure that enough penetrates the skin crusts to kill all the mites. Staff with scabies should be off work until 24 hours after their first treatment. Rash and itching may continue for several weeks after the infestation has been eliminated.

Treatment of close **household/patient contacts** is advisable even if asymptomatic as well as carers who may require treatment depending on type of contact and length of exposure. All those affected must be treated on the same day. Treatment of pregnant women, feeding mothers and children must be under medical supervision.



## **4. Infestation of the Environment**

Pests (animals or insects that cause damage or annoyance and may present a risk of infection) commonly infest healthcare premises. These include; cockroaches, Pharaoh ants, fleas, birds, rodents and cats. If you have any pest sightings/concerns within your area please follow the procedure below:

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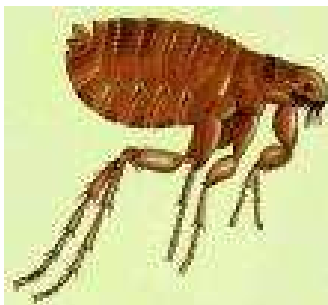
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#### 4.1 Fleas



Cat Flea

Infestation is usually with dog, cat or bird fleas, which will bite humans in the absence of the preferred host. The human flea is more likely to be introduced from outside the hospital, but is now fortunately rare and usually associated with vagrants or homeless people. Most bites are on the hands, wrists and ankles. Fleas live in the environment and are able to survive for some months without feeding. Removal of the host animal or treatment of pets and the use of suitable insecticides on environmental surfaces are therefore essential if control is to be effective.

Remove all the patient's clothing and bedding and seal in a white plastic bag within an outer red bag. **Patients do NOT need to be in Source Isolation.**

Arrange with the Pest Control Officer in the Estates Department a suitable insecticidal aerosol or powder to kill fleas and to treat surfaces in the environment concerned (home or ward). Vacuum clean floors, carpets, upholstery, fabrics etc.

#### 4.2 Bed Bugs



Bed Bug

Bed bugs leave their environment at night to feed by biting and sucking the blood from humans or animals. They are extremely resilient and can survive for up to one year without a feed. They do not pass from person to person. The bites can cause irritation and swelling in victims who become sensitized, typically bites occur on shoulders, back and arms i.e. in parts of body exposed at night. Please contact the appropriate **Facilities Helpdesk** (see above) to arrange spraying of infested area.

### **4.3 Cockroaches**

Any large building that is warm is prone to infestation. Cockroaches feed on meat and vegetable matter including sewage. They also need a supply of water and cavities in which to hide e.g. cracks and crevices behind wall and floor tiles. Infestation can be discouraged by storing food in tight-fitting container and secure cupboards, discarding food waste and refuse promptly, ensuring leaking pipes and damaged surfaces are repaired.

The two most common species to be found in hospitals are: Oriental cockroaches which normally infest plant rooms, ducts and drains, an German cockroaches which prefer more humid environments such as kitchens, laundries etc.

Cockroaches could in theory transmit infection if allowed to crawl over working surfaces or prepared food.

### **4.4 Pharaoh Ants**

These are tiny insects that can invade equipment and contaminate food. Colonies can live behind tiles, light fittings and in brickwork. In infested buildings ants are more numerous where high temperatures and humidity prevail i.e. boiler houses, air con units, heating ducts, kitchens and laundries. Nests have been found in heated food trolleys, drinks vending machines and autoclave units. They can chew through plastic and have been found in intravenous fluid sets and sterile packs. They eat meat and vegetable matter, preferring meat and sweet substances.

They may transmit infection and are more likely to be found in contact with patients and their equipment than cockroaches.

Treatment takes the form of a baiting programme which takes place over several weeks.

### **4.5 Pest Birds**

Pigeons and house sparrows become pests when their population is large enough to cause fowling, noise or secondary pests such as mites and fleas.

Roosting and perching can be deterred and controlled by three principal methods: repellent systems in the form of spikes, spring wires etc; proofing in the form of netting and approved population control techniques. Refuse must be carefully sited and spillages cleared up promptly.

### **4.6 Rodents**

Rats and mice can cause damage to furnishings, spoil food and may carry pathogenic bacteria.

They can be discouraged by good food storage, limiting water supplies, limiting harbourages by stacking goods off the floor in a tidy fashion and proofing any points of entry in order to prevent ingress. Waste should be discarded promptly.

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