AIDE MEMOIRE FOR MANAGEMENT OF INFECTION DUE TO PARASITES

This guidance does not override the individual responsibility of health professionals to make appropriate decisions according to the circumstances of the individual patient in consultation with the patient and / or carer. Healthcare professionals must be prepared to justify any deviation from this guidance.

INTRODUCTION

This document is designed to give guidance on the management of patients known or suspected to have parasitic infection.

Lead Clinician

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Ratified by Infection Prevention & Control Steering Group on:	20th May 2022
Review Date: This is the most current document and is to be used until a revised version is available	20th May 2025

Key amendments to the guideline:

Date	Amendment	By:
June 2010	Title name change only	Dr J Stockley
October 2012	All sections change to guidance on treatment of clothes and bedding 8d Change to treatment of head lice	Dr Claire Constantine
August 2015	Document extended for 12 months as per TMC paper approved on 22nd July 2015	TMC
April 2015	Document extended for 12 months as per TMC paper approved on 22nd July 2015	TMC
August 2016	Document extended for 5 months as per TMC paper approved 22nd July 2015	TMC
December 2016	Document extended for 3 months as per TLG recommendation	TLG
January 2016	Change wording of 'expiry date' on front page to the sentence added in at the request of the Coroner	
March 2017	Document extended for 3 months as approved by TLG	
June 2017	Document extended for 3 months as per TLG recommendation	TLG
October 2017	Document extended until end of November	Heather Gentry
December 2017	No clinical content changes , approved at TIPCC , changes to lead clinicians	TIPCC
February 2021	Document extended as per Trust agreement 11.02.2021	
May 2022	Reviewed, and minor updates included. Changed to become an Aide-Memoire with signposting to Pharmacy for treatment advice.	Tracey Cooper, DIPC

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AIDE-MEMOIRE

1 BED BUGS (*Cimex lectularius)*

1a INTRODUCTION

These are flat triangular insects, the young are white-yellow and the adults are red-brown in colour. The adult can grow to 5 mm long and has stink glands, which produces a characteristic odour.

During the day, the insect hides in crevices of walls, under loose wallpaper, in beds, furniture and carpets.

They are nocturnal and feed at night, usually one or two hours before dawn, biting their sleeping victim to suck blood, causing minor skin lesions. The parasite can survive for long periods without feeding (eg 150 days). Liquid urine from the insects can leave small brown or black marks on the sheets etc.

1b CLINICAL FEATURES

There is a wide variation in the effects of bites from minimal to marked irritation and swelling. In more marked reactions, erythematous macules in great number may be seen.

1c TREATMENT

Local application of calamine lotion to bites is first line, and an antihistamine may also be given if irritation is severe. Eradication of living / breeding sites is important (follow advice for environment, bedding and clothing).

1d ENVIRONMENT, CLOTHING AND BEDDING

Occasionally, transmission by clothing contact may occur.
Clothing and bedding should be treated as infected; bagged wearing apron and gloves, sealed and sent for a hot wash if practicable. They should be dried on as hot a cycle as possible.
Eradication with a long-acting pesticide for heavy infestation in the domestic setting is required, followed by structural repair and redecoration. Bed bugs are naturally tolerant to insecticides and it is recommended an expert in pest control undertakes eradication procedures.

1e EXCLUSION

None

2 HUMAN FLEAS (*Purlex irritans)*

2a INTRODUCTION

Human flea infestations are uncommon. They prefer cool, damp conditions. The larva and adults are most commonly found in beds, particularly where unwashed blankets are used without a sheet. They can also breed in cracks in floors and may use other primary hosts, including cats and dogs.

Note: Cat and dog fleas will bite humans, mainly on exposed skin, for example: around the ankles. Animal fleas can mature in carpets, soft furnishings, and animal bedding, behind panelling and even in air ducts. Eggs can hatch and pupae remain viable for months, independent of the animal host. It is possible therefore, for a human to suffer flea bites months after an infected animal has left a house. Re-infection of the animal is also common from these sources.

2b CLINICAL FEATURES

Bite marks from human fleas, can occur anywhere on the body and blood speckles may be found on clothing and bedding. Bite marks are discrete erythematous maculo-papules with a central bite point usually visible. Itchiness is quite variable.

2c TREATMENT

Local application of calamine lotion to bites is first line, and an antihistamine may also be given if irritation is severe. Eradication of living / breeding sites is important – see below.

2d ENVIRONMENT, CLOTHING AND BEDDING

A long lasting insecticide should be laid down in the house, along the skirting boards, floor cracks, wall cracks, and under furniture.

Carpets and soft furnishings should be treated with a recommended insecticide. (Advice can be sought from the local Environmental Health Department or Pest Control Specialist Company).

Clothing and bedding should be treated as infected; bagged wearing apron and gloves, sealed and sent for a hot wash if practicable. They should be dried on as hot a cycle as possible.

Domestic animals should be treated with an appropriate insecticide (advice should be sought from a vet).

2e EXCLUSION

None

3 SCABIES (*Sarcoptes scabiei)*

3a INTRODUCTION

Human scabies is a parasitic disease of the skin caused by infection with the mite *Sarcoptes scabiei*. The mite burrows under the skin and produces an allergic response in the host. The excreta and saliva of the mite cause this allergic response. The burrows can occur anywhere but are mainly present on the hands and arms. Sometimes a few are found on the genitals or female breasts. Burrows are not always seen.

3b TRANSMISSION

Transmission is by direct, prolonged, skin to skin contact, For example: by holding hands. Mites survive on the surface of the skin; they will die very quickly if they are not kept warm and moist.

Spread via bedding, clothing and soft furnishings is not normally a route of transmission (except in the case of crusted scabies).

3c CLINICAL FEATURES

The allergic reaction produces an extremely itchy and widespread rash. The rash has the appearance of small, raised pimples and patches of crusty skin. The itchiness is severe and is generally more intense at night.

The site of the rash, which can be widespread, does not correspond to the sites of the mites.

Secondary infection can alter the clinical appearance, and this problem may need specific treatment once after once the scabies treatment has been completed.

3d INCUBATION PERIOD

The symptoms of scabies take several weeks to appear in a first infection (2 to 6 weeks). However individuals who have had scabies before will produce symptoms within a few days of becoming re-infected (1 to 4 days).

3e TREATMENT

Since the symptoms of scabies take several weeks to appear, it is easy for close contacts to become infected before the disease is suspected. **Therefore anyone who is in close (body) contact with the first patient (index case) should also be treated at the same time as the index case.**

Contacts need treatment whether they are itching or not.

It is important that the treatment is carried out correctly to ensure a successful outcome.

Treatment is by topical preparations, usually Permethrin (as Lyclear dermal cream 5%) or Malathion 0.5% in an aqueous base (For example: Derbac M or Quellada M lotions). These preparations are both very effective if used correctly. It is important to apply the lotion or cream properly and leave on for the recommended time period (as per manufacturer's instructions). Treatment times vary between 8 and 24 hours. **NB:** Lyclear dermal cream is not recommended for use by pregnant or breast feeding women.

Seek Microbiology or Pharmacy advice for details of current treatment recommendations.

Application – General Guidance

1. A hot bath is **not** necessary before treatment. If a bath / shower is taken for hygiene purposes, then the skin should be dried and allowed to cool.
2. Application of a thin smear of the lotion to cover the whole body, excluding the face is necessary. It is important that **all** other areas of the body are treated these include:
    - behind the ears
    - around the hair-line (and scalp where the hair is scanty, thinning or balding)
    - soles of the feet
    - palms of hands and underneath finger nails
    - skin webs between fingers and toes
    - buttocks, groins and genital area

NB: In the elderly and young children it is recommended that the whole body including the face and head is treated. Care should be taken to avoid the eyes.

The lotion must be reapplied to the hands (or other body areas) each time they are washed during the treatment period.

The success of the treatment will depend upon how well it is applied.

3. Following the treatment period (see product recommendations, i.e 8 to 24 hours, a bath / shower or all over wash should be taken and all clothing and bedding changed.
4. Itching may persist for 2 to 3 weeks after successful treatment, but this should reduce substantially during the first week, and it can be treated with Eurax cream or calamine lotion.
5. A second treatment is usually required, 1 week after the first. For persistent symptoms other allergies or skin conditions should be excluded.

3f CONTACTS

All identified close contacts should receive treatment on the same day and should apply the lotion or cream in the same way.

Non-compliance by just one individual may make the difference between a success or failure of a planned treatment.

3g ENVIRONMENT, CLOTHING AND BEDDING

Bedding and clothing should be washed in the normal manner. No special precautions are necessary.

3h EXCLUSION

Exclusion from work, school or nursery is not required once treatment is completed.

4 CRUSTED SCABIES

4a INTRODUCTION

This is a rare condition that affects individuals with impaired immune response, (for example: the elderly, individuals with some learning disabilities, patients taking immunosuppressive drugs). This is caused by the mite as classical scabies but in this clinical scenario there are hundreds of scabies mites on the body, instead of a few dozen.

A dermatologist's opinion should be sought if this condition is suspected.

4b CLINICAL FEATURES

The clinical features are variable and can be difficult to differentiate from other skin disease. The rash if present can take any shape and signs of skin reaction may be anywhere on the body including the head and crusting is seen. There may be little or no itch. The skin can become thickened and look crusted with chronic Crusted Scabies, hence the name.

4c TRANSMISSION

Direct skin to skin contact. Environmental contamination may also occur and lead to spread (mites may be present in shed skin flakes). Carpets and soft furnishings will need to be vacuumed daily to reduce the risk of spread of infection.

4d TREATMENT

The same lotions can be used as for classical scabies but extended treatment is necessary. Oral treatments may also be given, but this should be under the direction of a Dermatologist. Advice for individual cases may be sought from the Public Health Team.

4e ENVIRONMENT, CLOTHING AND BEDDING

Clothing and bedding should be treated as infected; bagged wearing apron and gloves sealed and sent for a hot wash if practicable. They should be dried on as hot a cycle as possible. Items which cannot be hot-washed may be dry cleaned. Items that cannot be dry-cleaned or laundered can be disinfested by storing in a closed plastic bag for several days to a week. Scabies mites generally do not survive more than 2 to 3 days away from human skin.

4F CONTACTS AND EXCLUSION

As for classical scabies

5 THREADWORMS *(Enterobius vermicularis)*

5a INTRODUCTION

Threadworm eggs develop in the small intestine and then colonise the colon. The female worms migrate through the anal orifice, usually at night. They can lay up to 10,000 eggs in the perianal region.

Adult worms may sometimes be seen in faeces. The presence of eggs and worms can lead to discomfort and itching, which may in turn lead to disturbed nights and lack of sleep.

5b CLINICAL FEATURES
Infection causes intense perianal itch and irritation, especially at night.

5c TRANSMISSION
Eggs can be transmitted when they accumulate under the fingernails when the perianal region is scratched.

They can then be spread to other individuals, surfaces, bedding, clothing and carpets causing indirect spread. Eggs remain infective in an indoor environment for 2 weeks. Humans are the only host for this parasite.

5d INCUBATION PERIOD
2 to 6 weeks before onset of itching in persons without previous exposure. For those previously infested symptoms may develop in 1 to 4 days.

5e TREATMENT AND ADVICE
Seek advice from Pharmacy on treatment.

Strict attention should be paid to personal hygiene with daily showers and hands washed and nails scrubbed before meals and after using the toilet. Nails should be kept short and nailbrushes cleaned thoroughly after each use.

5f CONTACTS
All household contacts of a case should be treated at the same time.

5g ENVIRONMENT, CLOTHING AND BEDDING
Underclothes and nightwear should be changed daily in the mornings. Bed sheets should be changed daily during treatment and the house should be cleaned / vacuumed daily for several days after treatment. Eggs will only survive up to a fortnight outside the body, and are killed by washing linen using a hot wash.

5h EXCLUSION
None, once treated

6 BODY LICE (*Pediculus humanus corporis)*

6a INTRODUCTION
Adult body lice are slightly larger than head lice; they are found mainly within layers and seams of clothing and also on body surfaces especially in the axillae and around the waist.

6b TRANSMISSION
Transmission is usually by indirect contact with personal belongings, especially items of clothing. As long as eggs or lice remain alive on the person and in the clothing they can be transmitted to another person.

6c CLINICAL FEATURES

Itching and irritation of the body is common together with pinpoint macules (feeding points) on the skin, which resolve to leave a pigmented scar.

6d INCUBATION PERIOD

Eggs of body lice hatch in one week and reach maturity in 8 to 10 days.

6e TREATMENT

Treatment of the individual is rarely needed. The individual should take a shower or bath and a change of clothing is usually all that is required. If treatment is needed, seek Pharmacy advice.

6f CONTACTS

Any contacts that may have shared clothing or bedding should be investigated.

6g ENVIRONMENT, CLOTHING AND BEDDING

Body lice can survive in clothing for some time away from humans. Boiling or hot washing and ironing can disinfect items of clothing and bedding. Dry heat in a tumble dryer for 30 minutes is also effective in destroying lice. Clothing and items that are not washable can be dry-cleaned OR sealed in a plastic bag and stored for 2 weeks.

6h EXCLUSION

Work / school / nursery, etc – exclude until clothing is treated.

7 PUBIC LICE / CRAB LICE (*Pthirus pubis)*

7a INTRODUCTION

These lice and their eggs are usually found firmly attached to pubic hair but can also occur in the axillae, chest, legs, beard and eyebrows.

7b TRANSMISSION

Transmission is acquired during intimate contact, such as sexual contact.

7c CLINICAL FEATURES

Local irritation may be characterised by intense itching and occurs about a month after the lice are first present. Areas may often be heavily scratched. Eggs in the pubic hair of the groin may be cemented well away from the skin, but in cooler areas, they are found closer to the skin.

The eggs are oval, opalescent and smaller than those of other lice. Pubic lice move little compared to other varieties, but will frantically move to escape light.

7d INCUBATION PERIOD

Eggs and lice hatch in a week and reach maturity after approximately 8 to 10 days.

7e TREATMENT

Aqueous solutions of insecticides should be used in preference to alcohol based preparations, as infected areas are often heavily scratched. Seek advice from Pharmacy.

Treatment advice

Lotion should be applied to **all** parts of the body (not merely the groins and axillae) and left on for 12 hours.

Treatment should be repeated after 6 days to ensure lice emerging from eggs that survived the first treatment are killed.

7f CONTACTS

Spread is usually through intimate contact, so sexual partners should be treated.

7g ENVIRONMENT, CLOTHING AND BEDDING

Pubic lice do not live long away from a host (about 24 hours). Clothing and bedding do not need to be specially treated.

7h EXCLUSION

None necessary

8 HEAD LICE (*Pediculus humanus capitis)*

8a INTRODUCTION

The head louse is a small insect that lives close to the scalp for warmth and feeds by sucking blood. It moves by crawling through the hair and cannot jump or fly.

Adult head lice are approximately 3 mm long and are difficult to see.

A female louse lays 6 to 8 eggs a day at the base of a hair shaft approximately 1 mm from the scalp. The eggs hatch in 7 to 10 days, and the lice reach maturity about 9 days after hatching. As the louse grows it sheds its skin twice; this combined with faeces may be seen on the pillows of infected individuals as black dust.

Live eggs are firmly attached to the hair. After hatching, empty egg cases grow out of the hair at a rate of approximately 1 cm per month. These are white in colour and are often easier to detect than the lice themselves.

Infections are usually symptom free and are only discovered through regular, routine inspection of the hair. The scalp only becomes itchy with prolonged infections of many weeks. Persistent itching following treatment is not an indication of treatment failure.

8b TRANSMISSION

Head lice are transmitted by **direct, relatively prolonged, head to head contact only.** Lice observed on chair backs, pillows, hats or other such items are incapable of transferring to another person.

8c PREVENTION

There is **no effective preventative therapy** for head lice.

8d TREATMENT

If an infection is suspected the hair should be inspected using a detection comb to confirm the presence of live lice. (This is the responsibility of the individual themselves or a parent or carer.)

If live lice are detected, treatment should be commenced. If live lice are not detected, weekly detection combing should be undertaken.

Upon detection of live lice seek advice from Pharmacy.

Contact tracing must be undertaken of all close contacts. All individuals with proven infection should be treated at the same time or before contact is resumed.

9 CONTRIBUTION LIST

Key individuals involved in developing the document

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Circulated to the following individuals for comments

Name	Designation
	All members of Trust Infection Prevention & Control Committee

Circulated to the following CDs / Heads of department for comments from their directorates / departments

Name	Directorate / Department

Circulated to the chair of the following committees / groups for comments

Name	Committee / Group
Nick Hubbard	Trust Medicines Safety Committee

Supporting Document 1 – Equality Impact Assessment form

To be completed by the key document author and included as an appendix to key document when submitted to the appropriate committee for consideration and approval.

Herefordshire & Worcestershire STP - Equality Impact Assessment (EIA) Form
Please read EIA guidelines when completing this form

Section 1 - Name of Organisation (please tick)

Herefordshire & Worcestershire STP		Herefordshire Council		Herefordshire CCG	
Worcestershire Acute Hospitals NHS Trust	x	Worcestershire County Council		Worcestershire CCGs	
Worcestershire Health and Care NHS Trust		Wye Valley NHS Trust		Other (please state)	

Name of Lead for Activity	

Details of individuals completing this assessment	**Name**	**Job title**	**e-mail contact**
Date assessment completed			

Section 2

Activity being assessed (e.g. policy/procedure, document, service redesign, policy, strategy etc.)	**Title:** Aide Memoire for the management of infection due to parasites			
What is the aim, purpose and/or intended outcomes of this Activity?	See body of document			
Who will be affected by the development & implementation of this activity?	❑ ❑x ❑ ❑	Service User Patient Carers Visitors	❑x ❑ ❑ ❑	Staff Communities Other _____
Is this:	❑ xReview of an existing activity			

	❑ New activity ❑ Planning to withdraw or reduce a service, activity or presence?
What information and evidence have you reviewed to help inform this assessment? (Please name sources, eg demographic information for patients / services / staff groups affected, complaints etc.	See body of document
Summary of engagement or consultation undertaken (e.g. who and how have you engaged with, or why do you believe this is not required)	See body of document
Summary of relevant findings	See body of document

Section 3

Please consider the potential impact of this activity (during development & implementation) on each of the equality groups outlined below. **Please tick one or more impact box below for each Equality Group and explain your rationale**. Please note it is possible for the potential impact to be both positive and negative within the same equality group and this should be recorded. Remember to consider the impact on e.g. staff, public, patients, carers etc. in these equality groups.

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Age		x		
Disability		x		
Gender Reassignment		x		
Marriage & Civil Partnerships		x		
Pregnancy & Maternity		x		
Race including Traveling Communities		x		
Religion & Belief		x		
Sex		x		
Sexual Orientation		x		
Other Vulnerable and		x		

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Disadvantaged Groups (e.g. carers; care leavers; homeless; Social/Economic deprivation, travelling communities etc.)				
Health Inequalities (any preventable, unfair & unjust differences in health status between groups, populations or individuals that arise from the unequal distribution of social, environmental & economic conditions within societies)		x		

Section 4

What actions will you take to mitigate any potential negative impacts?	Risk identified	Actions required to reduce / eliminate negative impact	Who will lead on the action?	Timeframe
		.		
How will you monitor these actions?	See body of document			
When will you review this EIA? (e.g in a service redesign, this EIA should be revisited regularly throughout the design & implementation)	See body of document			

Section 5 - Please read and agree to the following Equality Statement

1. Equality Statement

1.1. All public bodies have a statutory duty under the Equality Act 2010 to set out arrangements to assess and consult on how their policies and functions impact on the 9 protected characteristics: Age; Disability; Gender Reassignment; Marriage & Civil Partnership; Pregnancy & Maternity; Race; Religion & Belief; Sex; Sexual Orientation

1.2. Our Organisations will challenge discrimination, promote equality, respect human rights, and aims to design and implement services, policies and measures that meet the diverse needs of our service, and population, ensuring that none are placed at a disadvantage over others.

1.3. All staff are expected to deliver services and provide services and care in a manner which respects the individuality of service users, patients, carer's etc, and as such treat

them and members of the workforce respectfully, paying due regard to the 9 protected characteristics.

Signature of person completing EIA	Completed on behalf of owner
Date signed	
Comments:	
Signature of person the Leader Person for this activity	
Date signed	
Comments:	

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	N
2.	Does the implementation of this document require additional revenue	N
3.	Does the implementation of this document require additional manpower	N
4.	Does the implementation of this document release any manpower costs through a change in practice	N
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	N
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval