



**衛生防護中心**  
Centre for Health Protection

**Infection Control Branch**

**Extended Care Service**

**Scabies Management**



衛生防護中心乃衛生署  
轄下執行疾病預防  
及控制的專業架構  
*The Centre for Health  
Protection is a  
professional arm of the  
Department of Health for  
disease prevention  
and control*

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## 1. Introduction

Long Term Care Facilities (LTCFs) applies to a diverse group of residential settings, ranging from institutions for the developmentally disabled to nursing homes for the elderly and pediatric chronic care facilities (1).

Scabies are found worldwide, outbreaks of scabies are frequently reported in overcrowded and unhygienic conditions.

LTCFs residents are brought together in one setting and remain in the facility for long periods of time, they are at increased risk for infestation of scabies. Reports indicate that scabies occurs in approximately 5% to 25% of LTCFs annually (2) and outbreaks have been well described in these settings (2–4).

## 2. Etiologic agent

- *Sarcoptes scabiei*, a mite
- *Sarcoptes scabiei* undergoes four stages in its life cycle: egg, larva, nymph and adult.
- The eggs require 10 days to progress through larval and nymph stages to form adult mites, which have a life span of approximately 1 to 2 months (2,3).
- Mites can survive for 2-3 days, whereas nymphs can survive 2-5 days at 25°C and 45%-75% humidity (2).
- Mites can burrow beneath skin surface in 2.5 minutes (2,5).

## 3. Mode of transmission

Humans are the natural reservoir

- Person to person transmission, through direct skin to skin contact of infested residents.
- Transmission by means of shared clothing or other indirect method is rare with classic scabies but may occur in crusted scabies (2,4–6).
- Transmission among family members and institutional setting is common (1–4,7).

#### **4. Incubation period**

- The main symptoms, which include generalized pruritus and rash, usually develop 2-6 weeks after new infestation.
- In case of re-infestation, symptoms develop 1-4 days after re-exposure.

#### **5. Period of communicability**

Until mites and eggs are totally destroyed by treatment, usually after 1 or occasionally 2 courses of treatment (5).

#### **6. Clinical presentation**

- Typical presenting symptoms are itching and typically more severe at night.
- Burrow-like pruritic lesions of hands, webs of fingers, wrists, and extensor surfaces of elbow, and knees, outer surfaces of feet, armpits, trunk, legs, penis, scrotum and nipples.
- Variation in lesions often leads to misdiagnosis with other skin condition such as eczema.
- Types of lesions include burrows, papules, scales, vesicles, bullae, crusts, pustules, and excoriations
- In infants and children, the elderly, and the immunocompromised, mites can also infect the face, neck, scalp, and ears.

##### **6.1 Conventional or classic scabies**

- 5 to 15 mites are present
- Nail involvement is uncommon
- Scratching causes bleeding and leads to the spread of infestation. Vigorous and constant scratching often results in secondary infections.

##### **6.2 Norwegian or crusted scabies**

- Persons with Norwegian scabies syndrome are highly contagious because of the large number (thousand or even millions) of mites harboring in skin.
- Present as crusty, scaly dermatitis usually of hands and feet with

dystrophic nails.

- Occur more frequently among the mentally incapacitated, physically debilitated, those with immuno-deficiency disorders (especially HIV infection) and with history of treatment with steroids.

## **7. Diagnosis**

- The diagnosis is based on history and examination of the patients, as well as history of family and close contact.
- The diagnosis can be confirmed by microscopic examination on mites or eggs. Multiple skin samples should be obtained.
- A negative skin scraping test from symptomatic person does not exclude diagnosis, because this technique is highly operator-dependent and the number of mites is low in conventional scabies.
- Another method involves applying ink to infested skin areas and then washing it off, thus revealing the burrows (2).

## **8. Infection prevention and control measures**

### **8.1 Early identification / recognition**

- Promote good surveillance of scabies in new residents. Perform skin inspection and observe for rashes on arrival at LTCFs.
- Maintain a high level of suspicion if patient presents with undiagnosed skin rashes.
- Educate staff on presentation and transmission of scabies.
- Encourage staff to report and seek medical consultation if skin rashes are detected.
- Staff diagnosed with scabies should be restricted from patient care activities until treatment is completed.
- Trace the source and contacts in case any resident is diagnosed to have scabies to control the spread of infestation.

### **8.2 Isolation precautions**

- Standard and contact precautions should be strictly followed.
- Prevent cross-infestation by practicing hand hygiene after each personal contact.

#### 8.2.1 Patient placement

- Infested patients should be isolated before application of scabicide.
- Resident should be placed under contact precautions during the defined treatment period.
- Isolating the resident with Norwegian scabies in a single room or isolated area is highly recommended.
- Cohort the infested residents together if there are more than 1 cases.

#### 8.2.2 Personal protective equipment and hand hygiene

- Wear gloves and gown when applying scabicide
- Wear gloves whenever touching patient skin
- Wear gown whenever anticipating that clothing will have direct contact with patient or potentially contact environmental surfaces or equipment in close proximity to the patient.
- After gown removal, ensure clothing and skin do not come in contact with potentially contaminated environment / surfaces.
- Perform hand hygiene, e.g. after removing PPE, and between patient care.

#### 8.2.3 Handling of used linen

- Bedding, towels and clothing should be changed and decontaminated by washing at 60°C for at least 10 minutes.
- All non-washable items should be placed in a plastic bag and sealed for at least 7 days (8–13)

#### 8.2.4 Patient care equipment and devices

- Multiple-use walking belts, skin cream and lotion have been shown to be a mode of transmission (2).
- Dedicated use of equipment is recommended.
- Equipment for common use should be cleaned with detergent before it is used on another resident.
- Shared use or suspected contaminated creams and lotions should be discarded due to risk of transmission.

#### 8.2.5 Environmental measures

- Frequent cleaning and disinfection, at least daily.
- For Norwegian scabies, vacuuming and damp dusting of the environment is recommended.

#### 8.2.6 Patient transport

- Limit transport and movement of resident inside and outside the LTCFs
- Inform the transfer area if transport is necessary.

#### 8.2.7 Family members / visitors / other residents

- Limit visiting during the infestation period.
- Educate family members/visitors/other residents to use PPE and perform hand hygiene.
- Advise to observe symptoms of rashes and seek medical advice if symptoms occur.
- Prophylactic treatment for frequent visitors/ family members/other residents with close contacts are essential

## 9. Treatment

Appropriate application of treatment is essential to prevent treatment failure. Most of relapses are due to lack of adherence to treatment protocol and low compliance (3,14,15).

### 9.1 Reasons for topical treatment failure

- Incomplete application to affected area. Some cases may involve area like ears, neck and scalps.
- No reapplication after washing hands
- No prophylactic treatment for close contacts, especially for those with frequent and regular contact with patients and visitors.

### 9.2 Application of topical treatment (Table 1)

- Inspect site of involvement from scalp to toes, apply treatment to the whole body and other involved area, and especially the fingers web, underneath the breasts, genitalia and under the nails.
- Trimming of fingernails is necessary for thorough application.

- Mites can be present in neck, scalp and ears in elderly, children and immunocompromised residents. Drugs should be applied to those area.
- Treatment should be applied after a warm bath to cool dry skin; hot bath would facilitates the absorption of agent from skin into blood stream, reducing efficacy and increasing the risk of systemic toxicity (7,14).
- Reapplication to washed areas, e.g. hands or other body parts.
- Follow the instruction of drug on the number of applications and treatment time.
- After successful treatment, itching may continue for a month. It is probably resulted from the allergens induced by dying mites and irritation of the eggs on the skin.

### 9.3 Application of oral treatment (Table 2)

#### 9.3.1 Indication

- Difficulties in topical treatment: non-cooperative residents
- Used for Norwegian scabies, in addition to topical scabicide
- Presence of dermatitis or other associated diseases (e.g. bullous skin diseases)



**Table 1. Topical Treatment of Scabies Infection**

Drug Name	Dose	Major side effects or contraindications	Remarks
<b>Topical treatment</b>			
Permethrin	<ul style="list-style-type: none"> <li>➤ 5% cream</li> <li>➤ Rinsed off after 8-14 hrs (4,16,17)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Itching and stinging on application (4,16)</li> <li>➤ May be used in infants <math>\geq 2</math> months of age, children, pregnant women and nursing mothers (4,7,16,17)</li> <li>➤ Skin rash, diarrhoea and rarely convulsion and death (3)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Recommended as first line therapy in Western countries (3,4,16)</li> </ul>
Benzyl benzoate	<ul style="list-style-type: none"> <li>➤ 10% or 25% lotion</li> <li>➤ Rinsed off after 24 hr (several other regimens possible)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Burning and stinging when applied to excoriated skin, pruritic cutaneous xerosis, or eczematous lesions post-treatment (4)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Commonly used in Hong Kong (3)</li> <li>➤ Not currently available in US</li> <li>➤ Approved in Europe (4)</li> <li>➤ Not recommended as first line in Western countries (3)</li> </ul>
Malathion	<ul style="list-style-type: none"> <li>➤ 0.5% lotion or cream</li> <li>➤ Rinsed off after 24 hrs.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Skin irritation but major side effect rare (3,7)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Not contraindicated in pregnancy or breast-feeding</li> </ul>
Crotamiton	<ul style="list-style-type: none"> <li>➤ 10% cream</li> <li>➤ Applied to nodules for 24 hr, rinsed off and reapplied for an additional 24 hr</li> </ul>	<ul style="list-style-type: none"> <li>➤ Skin rash (3)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Less effective (3,4)</li> <li>➤ Often used on scabies nodules in children (4) though not approved by FDA (8)</li> </ul>

**Table 2. Oral Treatment of Scabies Infection**

Drug Name	Dose	Major side effects or contraindications	Remarks
<b>Oral Treatment</b>			
Ivermectin	<ul style="list-style-type: none"> <li>➤ Single dose of 200µg /kg of body weight (commercially available as 3mg tablet) (4,17)</li> <li>➤ Repeated in 2 wks (4,17)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Excess risk of death for elderly patients not confirmed (4)</li> <li>➤ Safety in children weighing &lt; 15kg and pregnant women has not been established</li> </ul>	<ul style="list-style-type: none"> <li>➤ Approved in France, the Netherlands, Australia and Mexico (4,18)</li> <li>➤ Cost may vary widely and could be a limitation for use (4)</li> <li>➤ Post-marketing surveillance of various age groups and large populations needed (4)</li> <li>➤ Used in combination with topical treatments for treatment of Norwegian scabies that does not respond to topical treatment (4,7,15)</li> </ul>

## 10. Outbreak management

Managing a suspected or confirmed outbreak (19)

10.1 If scabies is suspected or a diagnosis is made in two or more linked cases of scabies identified at the LTCF in the last 2 months (14), it is useful to involve the Centre for Health Protection (CHP), Licensing Office of Residential Care Homes for the Elderly (LORCHE) of the Social Welfare Department, Elderly Health Services of the Department of Health and Community Geriatric Assessment Team(CGAT) of the Hospital Authority to develop an agreed action plan, so that a rapid structured investigation could be developed to uncover the source, to limit the spread and to prevent further transmission.

10.2 Preliminary information should be reported to the Central Notification Office (CENO) of CHP including:

- Name of the institute
- Address of the institute
- Contact person's name, post and telephone number
- Number of affected residents and staff (including those admitted)
- Total number of residents and staff

Further information may be sought:

- Line listing of name, age, sex and ID number of the sick staff and residents
- Bed location
- Date of onset
- Symptoms(e.g. rash, itching, excoriation)
- Medical records
- Staff sick leave records
- Floor layouts
- Information of previous activities
- Staff and residents list

10.3 Thoroughly examine all the residents and trace their close contacts (including staff, relatives or visitors) to identify any

unrecognized or unreported cases and give health advice as necessary.

- 10.4 Post a notice in a public area of the residential home to inform visitors that an outbreak of scabies infestation is currently occurring.
- 10.5 Preferably isolate the affected residents in a designated area / room for isolation before and during the treatment. Contact precautions should be enforced until treatment is completed.
- 10.6 Fix a treatment day and ensure sufficient staff on the day. It is preferable to treat case(s) and close contacts on the same day.
- 10.7 Order sufficient quantity of scabicide in advance.
- 10.8 Brief staff about scabies infestations and the management plan.
- 10.9 Repeat treatment as directed by doctor-in-charge.
- 10.10 Remind staff to put on protective gowns and gloves before touching affected residents under therapy and should wash their hands thoroughly after taking off the protective gowns and gloves.
- 10.11 Instruct and supervise staff on the proper way of using and applying anti-scabies medication according to doctor's instruction.
- 10.12 Wash clothing and linens of affected people separately and ensure that high temperature washing procedures are performed properly. Recommended washing temperature is 60°C with holding time longer than 10 minutes.
- 10.13 For non-washable items e.g. shoes and quilts, they can be packed inside a plastic bag till the mites die after 7 days (8–13).
- 10.14 Perform environment cleansing with detergent and water.

- 10.15 Vacuum all fabric covered soft furnishings and keeps them out of use for 24 hours in order to allow the mites on it to die (14).
- 10.16 Maintain awareness and close observation of scabies so that any new cases will be identified promptly. Staff should regularly and repeatedly check the skin condition of both the affected and also unaffected residents, and seek medical advice if suspected case is found.

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Surveillance and Epidemiology Branch, Centre for Health Protection

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