

Scabies: Management in Residential Care Facilities



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Scabies: Management in Residential Care Facilities

Introduction

Widespread outbreaks of scabies have occurred in residential care facilities (RCFs) in recent years. Scabies is a skin infestation with a mite called *Sarcoptes scabiei*.

Scabies mites burrow into the skin where they live and reproduce. Eggs laid in the burrows hatch, crawl out onto the skin and make new burrows. The skin infestation commonly involves the genital areas, buttocks, lower abdomen, wrists, forearms and webs between the fingers. Burrows are often difficult to see but can most often be seen on the webs between the fingers, around the waist (under the belt line), in the creases of the wrists and elbows, and on the palms and soles of the feet.

In addition, other areas such as the scalp, behind the ears, the face and base of the toenails should be checked for scaly skin which is a sign of crusted scabies.

The **diagnosis** should be confirmed by a general practitioner or dermatologist preferably through a skin scraping. Occasionally infestations may be due to other causes such as bird lice. Typically with scabies, the itch is worse at night and after hot showers.

The **incubation period** for people without previous exposure to scabies is 2-6 weeks. People who have been previously infested will develop symptoms within 1-4 days of re-exposure.

Method for obtaining a skin scraping

Requirements	Procedure
• No. 15 scalpel blade (scalpel blade) • Sharps box • Mineral oil • Cotton wool buds • Glass slides • Microscope • 10% potassium hydroxide solution or lactic acid	• Apply a small amount of mineral oil to the scalpel blade and the area to be scraped. • Hold the blade at a right angle and scrape the burrow with the sharp side of the scalpel, hard enough to abrade the skin without drawing blood. • Place the sample on a glass slide, cover with a second slide. • Examine under a microscope (40x magnification) for the mites, ova or faeces. • Several scrapings may be required to detect the mites. • Scraping from a burrow may need to be moistened with potassium hydroxide or lactic solution to clear the specimens and soften keratin so that mites or eggs can be clearly seen

Purpose

These guidelines describe escalating levels of response to a scabies outbreak in a residential care facility, based on specific features of the outbreak situation. These are categorised as:

- Stage 1** Isolated case/s of classical scabies.
- Stage 2** Increasing new cases of classical scabies, or recurrence in the same people.
- Stage 3** Epidemic of classical scabies.
- Stage 4** Epidemic including a case or cases of crusted (Norwegian) scabies.

Definitions

Contact - any person who has had skin-to-skin contact with an infested person and may include:

- other residents
- family and friends of residents,
- nursing staff
- personal carers
- volunteers
- medical staff
- laundry staff, including private launderers
- cleaning staff
- clergy
- catering staff
- allied health staff

Norwegian scabies - large numbers of very infectious mites in crusts.

Management of Stage 1: Isolated case/s of classical scabies

1.1 Treatment

- Warm shower/bath with soap. Dry thoroughly.
- Medication should be applied in the evening and left overnight.
- Apply medication from the neck down, ensuring all skin folds are treated eg. finger webs, toe webs, anal and vaginal clefts, umbilicus and axillae.
- Consider also treating the scalp, behind the ears, the face and the base of the toenails as older people can be affected in these areas.
- Apply a thin layer of medication under the fingernails (mites may have gathered there from scratching).
- Strict adherence to manufacturer's directions for medication/lotion is essential. Treatment failure is often due to non-compliance.

- Supply a clean change of clothes and bed linen.
- The next day, ie. 24 hours later, the treated person should wash off medication using warm water and soap, eg. shower/bath, and have a fresh change of clothing and bed linen.
- If medication is washed off during the 24 hour period eg. via hand washing or pressure area care, medication needs to be reapplied.
- Itching may persist for 1-2 weeks after treatment. During this period it should not be regarded as a sign of drug failure or re-infestation, as the itch is due to the development of hypersensitivity of the host person to the scabies mite.
- A second course of treatment is recommended at 7 days (or as per manufacturer's instructions) to ensure that any mites that may have hatched after the first treatment are killed. Over-treatment, ie. more than 2 treatments, should generally be avoided because of the potential toxicity of some of the treatment agents.
- Cases should be monitored for evidence of secondary bacterial infections.

1.2 Concurrent disinfestation

- Launder all underwear and clothing, including additional personal effects such as slippers, bed jackets, dressing gowns, knee rugs as well as bed linen used by an infested person in the 48 hours prior to treatment.
- Use hot cycles of the washing machine or dryer to kill mites.
- If items are unable to be laundered, place items in a plastic bag and leave for 48 hours, before airing and re-using, or if appropriate, tumble in a hot dryer for 10 minutes.

1.3 Isolation

- Prevent direct contact between the infested person and staff and residents from other areas for 24 hours after commencement of treatment.
- Ensure that, where possible, staff caring for the infested person wear a long-sleeved disposable gown and gloves during all contact, including contact with other residents who have had skin-to-skin contact with the infested resident.
- Laundry staff who have contact with the patient's soiled clothing/linen should also wear a gown and gloves.

1.4 Contacts

- Search for unreported and unrecognised cases among contacts.
- Treat presumptively and simultaneously those who had skin-to-skin contact with the infested person.

1.5 Education of residential care facility community

A meeting of staff, residents and family members to explain the situation and to educate affected individuals and those at risk is recommended.

Management of Stage 2: Increasing new cases of classical scabies or recurrence in the same cases

2.1 Surveillance

Increased monitoring of the skin health of residents and active communication with the treating doctors about cases in the facility is appropriate. Progression to Stage 3 can be prevented if the contagious source is identified early.

Recurrence in a case (after complete treatment regimen of 2 applications) indicates that a person may have undetected crusted scabies in areas such as the scalp, behind the ears, and face (which are areas not normally treated in patients with classical scabies) and the base of the toenails. These areas should be checked both initially and before commencing another treatment. A single case of crusted scabies changes the management stage to Stage 4. Other reasons for recurrence are re-infestation from another source, or infestation with scabies resistant to the treatment product.

2.2 Treatment

- As described for Stage 1, with the following additions:
 - Where re-treatment is required, include areas such as the scalp, behind the ears and bases of toenails.
 - If crusted scabies is identified, Stage 4 management is required.

2.3 Concurrent disinfestation

- As described for Stage 1.

2.4 Isolation

- As described for Stage 1, with the following addition:
 - Confine all infested residents in the same area for 24 hours after commencement of treatment.

2.5 Contacts

- Search for unreported and unrecognised cases among a wider range of contacts.
- Treat presumptively and simultaneously those who had skin-to-skin contact with the infested person.
- Consider treating all residents in an affected area or ward where residents may have had skin-to-skin contact unnoticed by facility management.

Management of Stage 3: Epidemic of classical scabies

3.1 Surveillance

It is likely that there is an unidentified crusted (Norwegian) scabies source, or a new (infested) resident, or residents with recurrent infestation following successful treatment. All residents in affected sections of the facility should be

checked. It may be necessary to check all residents of the facility if staff are moving between sections or wards. Checking must include areas such as the scalp, the face, behind the ears and the base of the toenails. Scabies mites have been found in these body areas in residents who had few lesions elsewhere.

3.2 Communication

- Hold meeting(s) with staff, residents and family members to explain the situation and to educate infested individuals and others about the risk.

3.3 Treatment

As described for Stage 2, with the following additions:

- Treatment needs to be undertaken on a coordinated mass basis on the same day, in cooperation with the treating doctors.
- Treat all infested residents concurrently.
- There will be a need to address pharmacy supply issues.

3.4 Concurrent disinfestation

As described for Stage 1, with the following additions:

- Vacuum all carpets, rugs, fabric-covered chairs etc. For items unable to be laundered eg. fabric-covered chairs, rugs etc, place them in a plastic bag for 48 hours or leave them isolated in a closed room for 48 hours or spray with an insecticide.
- Thoroughly wipe over non-fabric-covered surfaces such as vinyl chairs and plastic mattress covers with a standard cleaning solution.
- Vacuum seams with a high suction (ie. small diameter) nozzle. Seams should then be treated with insecticide because a vacuum cleaner may not pick up all mites.
- The vacuum cleaner should be lightly sprayed with insecticide after use to destroy mites that may have accumulated on its surface during cleaning.
- Areas such as toilet seats and commode chair seats need to be thoroughly wiped after each use with a cleaning solution.
- Smooth floors need to be thoroughly mopped using a standard cleaning solution. Carpeted floors should be vacuumed and, if skin contact is possible, treated with an insecticide.

Note: Use of insecticide

- Scabies mites are readily susceptible to low toxicity 'fly spray' type insecticides which are usually synthetic pyrethroids. Synthetic pyrethroids often have names ending in 'thrin' eg. bioresmethrin, tetramethrin, transfluthrin.
- Insecticides need to be used according to the directions on the label.
- Only a small amount of spray, evenly applied across a surface is required. Large amounts or residual surface sprays are not required.
- Pregnant women should avoid exposure.

- Residents should be removed from a room while insecticide is being used.
- Rooms should be well-ventilated before being reoccupied.
- Extensive treatments are unlikely to be necessary. However, if extensive treatment is required, it is recommended that a licensed pest control operator is used.

3.5 Isolation

- As described for Stage 1, with the following additions:
 - Confine all infested residents to their rooms for 24 hours after commencement of treatment.
 - Where possible, staff caring for infested residents should not care for non-infested residents.

3.6 Contacts

- As described for Stage 2.

Management of Stage 4: Epidemic including a case or cases of crusted (Norwegian) scabies

In classical scabies there may only be small numbers of scabies mites (eg. 30 –40). People with crusted (Norwegian) scabies may have an impaired immune response resulting in a diminished awareness of the itch, and huge numbers of scabies mites (eg. 2-3 million) may accumulate. For this reason more intensive environmental management will be required.

4.1 Surveillance

- As described for Stage 3.

4.2 Treatment

As described for Stage 3 with the following exceptions:

- The patient with crusted scabies may need more than 3 treatments to clear the infestation, and the involvement of a dermatologist to provide assessment and treatment advice is recommended.
- Treatment agents must be applied to scalp, behind ear folds and face.
- Keratolytic agents (such as salicylic acid 5-10% in petroleum) may be needed in combination with the scabicide in order to soften or remove the layer of crusting skin.
- An alternative treatment such as ivermectin may be needed:
 - In Australia, oral ivermectin has been registered to treat lymphatic onchocerciasis and intestinal strongyloidiasis. The drug is not registered for treatment of scabies but has been used to control severe crusted scabies. It is also used in elderly people with eczematous skin who are poorly tolerant to topical scabicides because they cause a burning sensation.

- As it is not a registered indication, patients need to be aware that it is an 'off label' use but that its safety and quality have been assessed as part of its registration for other indications. It needs to be used under the supervision of a medical practitioner who will determine the combination of systemic and local treatments required for the case.
- Patients in most nursing homes are seen by different general practitioners, some or all of whom may be reluctant to prescribe ivermectin off label without specialist advice. Furthermore, this is an expensive medication. With the support of a dermatologist or infectious diseases physician, and in cooperation with residents' general practitioners, it may be decided that ivermectin is required for a group of residents. In this situation, it may be appropriate to arrange a mass prescription for ivermectin via the local hospital pharmacy.

4.3 Concurrent disinfestation

As described for Stage 3, with the following exceptions:

- Spray with an insecticide all carpets, rugs, fabric covered chairs etc in the area(s) used by infested persons.
- If items are not hot laundered or hot dried or treated with insecticide, the items must be isolated for **10 days**.
- **Notes regarding cases of crusted scabies:**
 - Thickened skin flakes that slough off may harbour 100 or more scabies mites. Within the protection of the skin flake, the scabies mites can survive off the body for longer than the usual limit of 48 hours.
 - Scabies eggs have only been collected in the environment in skin flakes which have dropped from people with crusted (Norwegian) scabies.

4.4 Isolation

- If possible, isolate patient/s with crusted scabies from other residents until infestation is clear. It is recommended that contact precautions stay in effect until skin scraping tests have been negative for three consecutive days (Queensland Health Infection Control Guidelines 2001).
- Laundry staff having contact with patients' soiled clothing/linen should wear a disposable gown and gloves.
- Exclude staff caring for patients with crusted scabies from contact with other areas and residents of the facility for 24 hours after commencement of treatment.

4.5 Further information

For further information on the management of a suspected scabies outbreak in a residential care facility, please contact the nearest public health unit (see next page).

Queensland Public Health Units

Public Health Unit	Phone (07)	Fax (07)
Brisbane Northside	3624 1111	3624 1159
Brisbane Southside	3000 9148	3000 9121
Cairns	4050 3600	4031 1440
Darling Downs	4631 9888	4639 4772
Gold Coast	5509 7222	5561 1851
Logan	3412 2989	3412 2999
Longreach	4652 6000	4658 0869
Mackay	4968 6611	4968 6610
Moreton Bay	3142 1800	3142 1824
Mt Isa	4744 9100	4744 9124
Rockhampton	4920 6989	4920 6865
South West	4656 8100	4654 2615
Sunshine Coast	5409 6600	5443 5488
Townsville	4753 9000	4753 9001
West Moreton	3413 1200	3413 1201
Wide Bay (Hervey Bay)	4120 6000	4120 6009
Wide Bay (Bundaberg)	4150 2780	4150 2729

References

1. Andersen, BM, Haugen, H, Rasch, M, Heldal, HA, Tageson, A (2000). Outbreak of scabies in Norwegian nursing homes and home care patients: control and prevention. *Journal of Hospital Infection*. 45(2):160-4.
2. Cammans J, Bond P, James N, Jarrett P, Langley A, Mangas S (Editors) (1999). Guidelines for the control of public health pests – lice, fleas, scabies, bird mites, bed bugs and ticks. *NEH Forum Monographs, General Series No. 3*.
3. Casey, D, Roberts, C (2001). How to take scabies scrapings. *Practice Nursing*. 13(1): 30.
4. Commonwealth of Australia (2004). *Infection Control Guidelines*, 3.2.1, Part 4. Department of Health and Ageing.
5. Heymann, DL Ed, (2004). *Control of Communicable Diseases Manual*, 18th Edition, pp 473-476. American Public Health Association, Washington DC.
6. Gardner, JF, Peel, MM (1991). *Introduction to Sterilization, Disinfection and Infection Control*, 2nd Edition, pp. 165-167, Churchill Livingstone, Melbourne.
7. Meltzer, E (2002). Ivermectin and the treatment of outbreaks of scabies in medical facilities. *Harefuah*. 141(11):948-52, 1011.
8. Mottram, P (2002). *Scabies, up-to-date information*, pp. 1-13, Queensland Health (unpublished).
9. Nakamura, E, Taniguchi, H, Ohtaki, N (2006). A case of crusted scabies with a bullous pemphigoid-like eruption and nail involvement. *Journal of Dermatology*. 33(3):196-201.
10. Paasch, U, Haustein, UF (2000). Management of endemic outbreaks of scabies with allethrin, permethrin, and Ivermectin. *International Journal of Dermatology*. 39(6):463-70.
11. Queensland Health Infection Control Expert Working Group (2001). *Infection Control Guidelines*, pp. 15-32 Queensland Health.
12. Rockhampton Health Service District (2005). *Infection Control Manual*, 4.1-4.2. Queensland Health.
13. Scheinfeld, N (2004). Controlling scabies in institutional settings: a review of medications, treatment models, and implementation. *American Journal of Clinical Dermatology*. 5(1):31-7.
14. Sullivan, JR, Watt, G, Barker, B (1997). Successful use of ivermectin in the treatment of endemic scabies in a nursing home. *Australasian Journal of Dermatology*. 38(3):137-40.
15. Tan, HH, Goh, CL (2001). Parasitic skin infections in the elderly: recognition and drug treatment. *Drugs and Aging*. 18(3):165-76.
16. Wick, JY, Zanni, GR (2006). Outbreak: 10 tips to make scabies scamper. *Consultant Pharmacist*. 21(6):512-4.