



INFECTION PREVENTION IN LONG TERM CARE

Scabies

Massachusetts Department of Public Health

DISEASE OVERVIEW

Scabies is an infestation of the skin caused by a mite, *Sarcoptes scabiei*. Scabies can affect people without regard to age, sex, race or standards of personal hygiene. The most prominent symptom of scabies is intense itching (pruritis), particularly at night. The itching is caused by reaction to scabies mites as they burrow under the top layer of skin to feed and lay eggs. On a person, mites can live for as long as 1-2 months. Scabies mites do not survive more than 2-3 days away from human skin.

Crusted Scabies, also referred to as Norwegian Scabies, is a more severe and highly contagious form of the disease. In persons with crusted scabies, hundreds to millions of mites infest the host individual, who is usually immunocompromised, elderly, or physically or mentally disabled and impaired. It is characterized by vesicles and formation of thick crusts over the skin, accompanied by abundant mites. Individuals with crusted scabies may not show the usual signs and symptoms of scabies such as the characteristic rash or itching. Because it is so highly transmissible, crusted scabies requires rapid and aggressive detection, diagnosis, infection control, and treatment measures to prevent and control spread.

Scabies in Long Term Care Facilities (LTCFs): Scabies outbreaks have occurred among residents, visitors, and staff in LTCFs. An infestation can become an outbreak due to close contact between residents and healthcare workers, and the movement of residents into common areas of the facility. Additionally, an infested healthcare worker can spread the infection to residents under his or her care, resulting in an outbreak in a previously scabies-free facility or unit. The pattern of the scabies rash in elderly and immunocompromised residents may be atypical, appearing on the back, abdomen, under breasts or at the waist line, rather than the typical scabies rash areas of webbing between the fingers, in the skin folds on the wrist, elbow, or knee, and on the penis, breast, or shoulder blades. Additionally, the typical symptoms of intense itching, especially at night during sleep, is not as common in elderly and immunocompromised residents. Finally, outbreaks in elderly and immunocompromised residents are diagnosed more slowly because itching and burrows may be less apparent. If itching and burrows are present, typical burrows may not be visible for up to 30 days after infestation. This increases the risk of nosocomial spread.

Complications due to scabies infestations are usually caused by secondary bacterial infections from scratching. Early recognition and rapid treatment are essential in preventing outbreaks of scabies.

Infestation with scabies is not grounds for denial of admission to a long-term care facility.

Transmission: Scabies mites are transmitted by direct, prolonged, skin-to-skin contact with a person who is infested. Because the female scabies mite burrows under the skin as quickly as 30 seconds after mating, infestation can occur with very brief skin-to-skin contact. However, the longer the duration of skin-to-skin contact, the more likely it is for mites on the surface of the body to transmit from person to

person, spreading the infestation. Less often, infestation occurs by exposure to contaminated bedding, clothing or even furniture. Humans are the source of human infestation; animals do not spread scabies to people. Scabies can be spread in households and through sexual contact. An infested person can transmit scabies, even if they do not have symptoms, until they are successfully treated, and the mites and their eggs are destroyed.

Incubation Period: The incubation period for scabies is two to six weeks in individuals without previous exposure. Individuals who have been previously infested may develop symptoms within 1-4 days after re-exposure.

Diagnosis: The diagnosis of scabies can be confirmed by examination of skin scrapings. They are found most often in the webbing between the fingers, in the skin folds on the wrist, elbow, or knee, and on the penis, breast, or shoulder blades. The average individual with scabies may have only 10 to 15 mites, thus making diagnosis difficult.

Treatment: Scabicides are topical and oral medications used to treat scabies. **Five percent permethrin** topical cream is the drug of choice for treatment of scabies, and is safe and effective when used as directed. Topical scabicides should be applied to all areas of the body from the neck down to the feet and toes. The scabicide should be applied to a clean body and left on for the recommended time before washing it off. Clean clothing should be worn after treatment. Treatment guidance varies with the medication used; therefore, the manufacturer's labels or the prescriber's directions should be followed.

Ivermectin is an oral medication approved for the treatment of worm infestations and infections. Evidence suggests that oral ivermectin may be a safe and effective treatment for scabies; however, ivermectin is not FDA-approved for this use. The safety of ivermectin in children weighing less than 15 kg and in pregnant women has not been established.

Crusted scabies usually requires a treatment with a combination of both topical and oral medication.

For more information on the treatment of scabies: CDC Guidelines for Medications Used to Treat Scabies: http://www.cdc.gov/parasites/scabies/health_professionals/meds.html

INFECTION CONTROL AND PREVENTION

Implementation of, and adherence to, infection control practices are key to preventing the transmission of infectious diseases in all healthcare facilities. LTCFs should have a written scabies infection prevention and control plan; train healthcare workers to recognize, document, and report the condition of residents' skin at the time of admission; implement isolation precautions for residents with suspicious rashes or symptoms; identify how to access diagnostic tests; and treat cases and their contacts with an effective scabicide. Do not transfer a patient without notifying the accepting facility of the diagnosis of scabies.

Standard Precautions should be used consistently and at **all** times, by all staff, in LTCFs. Most residents can be cared for using Standard Precautions, with an emphasis on strict adherence to hand hygiene and appropriate glove use. **In addition to standard precautions, contact precautions should be used for the care of patients infested with scabies until treated with an appropriate scabicide.** General infection control measures, including standard and contact precautions for healthcare providers can be found at: <http://www.mass.gov/eohhs/docs/dph/cdc/infection-control/general-measures.pdf>.

CDC Guidelines for the Prevention and Control of Scabies in Long Term Care is available at: http://www.cdc.gov/parasites/scabies/health_professionals/institutions.html

Infection control for *non-crusted scabies*:

- Place the resident on contact precautions and restrict the resident to their room for the duration of the first treatment period (8-12 hours). Contact precaution should continue until 24 hours following treatment.
- Use gloves when giving hands-on care to any resident who is suspected or confirmed to have scabies; wash hands thoroughly after providing care to any resident.
- Avoid skin-to-skin contact with anyone with scabies for at least 8 hours after application of scabicide treatment.
- Bathe or shower the resident prior to applying scabicide if the resident has not been bathed within the previous 24 hours. Wash hair and clip and clean resident's finger and toe nails.
- Apply scabicide.
- Bathe resident to remove scabicide and discontinue contact precautions. Isolation precautions are not necessary for prophylactic treatments (e.g., follow-up treatments or treatment of asymptomatic contacts).
- Treat all symptomatic health care workers, volunteers and visitors. Healthcare workers diagnosed with scabies should not return to work until 24 hours after treatment and should also speak with their health care provider about simultaneous prophylactic treatment of their household contacts.
- Offer treatment to household members (e.g. spouses, children, etc.) of staff who are receiving scabies treatment.

Infection control for *crusted scabies*: Persons with crusted scabies are infested with very large numbers of mites; this increases the risk of transmission both from brief skin-to-skin contact and from contact with items such as bedding, clothing, furniture, rugs, carpeting, floors, and other fomites that can become contaminated with skin scales and crusts shed by a person with crusted scabies.

Until successfully treated, residents with crusted scabies should be isolated from other residents who do not have crusted scabies under strict contact precautions. Assigning a cohort of caretakers to care only for patients with crusted scabies can reduce the potential for further transmission. Direct skin-to-skin contact between a patient with crusted scabies and his/her caretakers and visitors should be eliminated by following strict contact precautions, including the use of protective garments such as gowns, gloves, and shoe covers.

- Maintain contact precautions until skin scrapings from a resident with crusted scabies are negative; persons with crusted scabies generally must be treated at least twice, a week apart; oral ivermectin may be necessary for successful treatment.
- Limit visitors for residents with crusted scabies; visitors should use the same contact precautions and protective clothing as staff.
- Identify and treat all residents, staff, and visitors who may have been exposed to a resident with crusted scabies or to clothing, bedding, furniture or other items (fomites) used by such a resident; strongly consider treatment even in equivocal circumstances because controlling an outbreak arising from crusted scabies can be very difficult and risk associated with treatment is relatively low.
- Offer treatment to household members (e.g. spouses, children, etc.) of staff who are undergoing scabies treatment.
- Treat residents, staff, and household members at the same time to prevent re-exposure and continued transmission.
- Staff generally can return to work the day after treatment. However, symptomatic staff who provide hands-on care to any resident may need to use disposable gloves for several days after treatment until sure they are no longer infested.
- Use procedures that minimize risk of transmission of secondary bacterial infections.

Outbreak Control: If multiple cases occur in a facility, or there is evidence of transmission among residents, staff and/or visitors, more extensive control measures are required. In outbreak situations, in addition to the recommendations for single cases described above, treat all residents and healthcare workers (both symptomatic and asymptomatic) on affected units simultaneously. Expand surveillance to the entire facility. Educate healthcare workers on the symptoms, prevention, and control of scabies. Suspend staff floating. Treat symptomatic employees on unaffected units and look for spread of skin lesions on that unit.

Surveillance: Surveillance for additional cases should be undertaken among healthcare workers and contacts of the case, including family members and regular visitors. Cases should be re-examined on days 14 and 28 post-treatment, however, itching may not subside for several weeks despite successful treatment.

Environmental Measures: All bedding, clothing, and towels that have come in contact with the infested person's skin within three days prior to treatment should be machine washed with detergent in hot water and dried using the hot cycle or by dry-cleaning. Scabies mites do not survive more than 2 to 3 days without contact with skin. Objects that cannot be washed can be placed in plastic bags for 3-7 days to ensure the elimination of eggs as well as mites. Carpets, furniture, and mattresses that have been in contact with cases should be vacuumed. Environmental surfaces including wheelchairs, walkers, bed frames, tables, chairs, blood pressure cuffs, walking belts, and other equipment and surfaces should be cleaned and disinfected with an Environmental Protection Agency (EPA) registered product approved for use in healthcare facilities.

Communication: Establish procedures for identifying and notifying at-risk residents and staff who are no longer at the institution. Ensure a proactive employee health service approach to scabies including

providing information about scabies to all staff and household members. Maintain an open and cooperative attitude between management and staff.

REPORTING RESPONSIBILITIES

Outbreaks should be reported to the Bureau of Health Care Quality and Safety at (617) 753-8150 during normal business hours and (617) 363-0755 after normal business hours. For further information or assistance with control measures, call the Division of Epidemiology and Immunization at (617) 983-6800.

Information about reportable diseases to the Massachusetts Department of Public Health can be found here: <http://www.mass.gov/eohhs/gov/departments/dph/programs/id/epidemiology/rdiq/reporting-diseases-and-surveillance-information.html>

REFERENCES

Smith PW, Bennett G, Bradley S, Drinka P, Lautenbach E, Marx J, Mody L, Nicolle L, Stevenson K, SHEA, et al. SHEA/APIC Guideline: Infection Prevention and Control in the Long-Term Care Facility: *Infection Control and Hospital Epidemiology*. 2008 Sep; 29(9):785-814.
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3319407/>

Center for Disease Control and Prevention. Parasites Scabies.
<http://www.cdc.gov/parasites/scabies/index.html>

Center for Disease Control and Prevention and the Healthcare Infection Control Practices Advisory Committee. Guidelines for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings 2007. http://www.cdc.gov/ncidod/dhqp/gl_isolation.html

Chosidow O. Clinical practices. Scabies. *N Engl J Med* 2006; 354: 1718-27:
<http://www.nejm.org/doi/pdf/10.1056/NEJMcp052784>

Christine K. Cahill, MS, BS, RN, Jon Rosenberg, MD, Steven J. Schweon, RN, MPH, CIC, HEM, Philip W. Smith, MD, and Lindsay E. Nicolle, MD, FRCPC. *Annals of Long Term Care*. Scabies Surveillance, Prevention, and Control. <http://www.annalsoflongtermcare.com/content/scabies-surveillance-prevention-and-control>

Degelau, J. Scabies in long-term care facilities. *Inf Control Hospital Epidemiology* 1992; 13(7): 421-425.

Scheinfeld N. Controlling scabies in institutional settings: a review of medications, treatment models, and implementation. *Am J Clin Dermatol.* 2004; 5(1):31-37.

Vorou R, Remoudaki HD, Maltezou. Nosocomial scabies. *J Hosp Infect.* 2007;65:9-14.