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Introduction
Scabies is found worldwide with approximately 300 million cases annually. It affects people of all ages, races and social classes. Outbreaks have been well described in hospitals and long-term care facilities; scabies occurs in approximately 5 to 25 percent of long-term care facilities annually. Outbreaks also occur in other institutional settings such as prisons, child care centers, schools and assisted living facilities. Scabies outbreaks can cause a substantial burden on health systems and can lead to serious health complications in patients such as septicemia, heart disease and chronic kidney disease.

Scabies is caused by an infestation of the human itch mite, Sarcoptes scabiei var. hominis, which burrows under the upper layer of the skin of humans where it lives and lays eggs. While on the skin’s surface, the scabies mites feed off sloughed skin and skin secretions, or hair follicle secretions and, therefore, require human hosts to survive. Typically, they can only survive without a host for two to four days, but may survive on sloughed skin up to a week. The burrows (tunnels) are tiny, raised, winding lines that are grayish or skin-colored and can be a centimeter or longer in length.

The purpose of this manual is to provide a comprehensive, yet concise, scabies resource for health departments, healthcare facilities and other institutions where scabies outbreaks are common. The manual may be used to assist staff with prevention and control efforts. It may also be used to provide guidance when an individual is diagnosed with scabies and/or when an outbreak of scabies occurs.

Biology
The life cycle of Sarcoptes scabiei, which takes approximately 10 to 17 days to complete, consists of four stages:

1. Egg – Females deposit two to three eggs per day as they burrow under the skin. These eggs are oval and are 0.10 to 0.15 millimeters in length; they hatch in three to four days.
2. Larva - The larvae emerge from the eggs and have only three pairs of legs. They make their way to the skin surface and burrow into the intact, outer layer of the skin. These short burrows are called molting pouches and are almost invisible. This stage lasts about three to four days. Sometimes larvae make use of the hair follicles as molting pouches.
3. Nymph - The larvae molt, resulting in nymphs which have four pairs of legs and which molt again into slightly larger nymphs before molting into adults.
4. Adult - Adults are oval, sac-like, eyeless mites. Females are 0.30 to 0.45 mm long and 0.25 to 0.35 mm wide; males are slightly more than half that size. Males are rarely seen; they make temporary shallow pits in the skin to feed until they locate a female’s burrow and then they mate. Mating occurs after the male penetrates the molting pouch of the
adult female. Mating occurs only once; the female remains fertile for the rest of her life. Impregnated females leave their molting pouches and wander on the surface of the skin until they find a suitable site for a permanent burrow. They then begin to make their characteristic, winding burrows, laying eggs in the process. They continue to lengthen their burrows and lay eggs for the rest of their lives (one to two months). Under ideal conditions, about 10 percent of the female’s eggs eventually result in adult mites.

*Larvae and nymphs look similar to adults, only smaller*

![Diagram of the scabies mite life cycle](image)

**Figure 1: Life cycle of the scabies mite. All stages take place on the host.**

**Clinical Presentation**

There are two types of scabies infestations. They are non-crusted, or typical, scabies infestations and crusted (Norwegian) scabies infestations.

**Typical Scabies**

A typical infestation consists of between 10 and 15 live, adult female mites on the body. Because the rash can be hard to distinguish from other types of rashes, the person should be placed on contact precautions and the rash should be evaluated by a healthcare professional experienced with scabies recognition. Signs of infestation can take up to six weeks to be noticeable and generally consists of a “pimple-like” rash and thin burrow tracks that could look like a line of tiny blisters or bumps. A normal healthy person may complain of itching that
increases at night, however the response to scabies may be muted in the immunocompromised or elderly.

**Crusted (Norwegian) Scabies**

Crusted (Norwegian) scabies is a severe form of scabies. Persons with crusted scabies have thick crusts of skin that flake or peel off and contain large numbers of scabies mites and eggs. The mites in crusted scabies are not more active or aggressive than in non-crusted scabies; however, they are much more numerous (up to 2 million per person compared to 10 to 15 per person) and can be shed in the scales and flakes from the affected skin allowing them to survive for up to a week without the host. In outbreak situations, a case of crusted scabies is usually the source. Crusted scabies is more prevalent in persons who are institutionalized, debilitated or immunocompromised.

**Transmission**

Scabies are transmitted when an impregnated female moves from an infested person to a non-infested person. Once the microscopic mite contacts the skin of the new host, these mites can burrow underneath the skin in an hour. The primary mode of transmission of the human scabies mite is direct contact between two individuals. Although mites cannot jump, they can readily move to a new individual. *An infested person can spread scabies even if he or she has no symptoms.*

**Typical scabies** usually is spread by direct, prolonged, skin-to-skin contact with an infested person, such as when holding hands, giving a person a bath, applying lotions, etc. A quick handshake or hug usually will not spread typical scabies. Any person who has had direct contact with someone who has scabies may be at risk. Scabies is spread easily to sexual partners and household members. Sleeping with, or having sex with, any scabies infested person presents a high risk for transmission; scabies in adults frequently is sexually acquired. The longer a person has skin-to-skin exposure, the greater is the likelihood for transmission to occur. Scabies sometimes spreads indirectly by sharing articles such as clothing, towels or bedding used by an infested person. However, such indirect spread can occur much more easily when the infested person has crusted scabies.

People with *crusted scabies* are much more contagious than people with typical scabies because they are infested with such large numbers of mites. While briefly shaking hands with a person who has typical scabies could be considered relatively low risk, this same handshake presents a much higher risk if the person has crusted scabies. In addition to spreading scabies through brief direct skin-to-skin contact, persons with crusted scabies can much more easily transmit scabies indirectly by shedding mites that contaminate items such as clothing, bedding.
and furniture. Transmission of scabies has also been noted from shared lotions or creams, walking belts and blood pressure cuffs. In general, a person who has any skin-to-skin contact with a person who has crusted scabies would be considered at high risk for transmission.

Only humans are the source of scabies infestations; animals do not spread human scabies. Pets can become infested with a different kind of scabies mite that does not survive or reproduce on humans but causes "mange" in animals. If an animal with "mange" has close contact with a person, the animal mite can get under the person’s skin and cause temporary itching and skin irritation. However, the animal mite cannot reproduce on a person and will die on its own in a couple of days. Although the person does not need to be treated, the animal should be treated because its mites can continue to burrow into the person’s skin and cause symptoms until the animal has been treated successfully.

**Incubation Period and Common Symptoms**

The earliest and most common symptom of scabies is severe itching, especially at night. A pimple-like, itchy “scabies rash” is also common. These symptoms are caused by a type of allergic reaction to the proteins and feces of the scabies mites. If the body has never been exposed to the proteins and feces of the scabies mite before, it takes the immune system some time to develop this reaction and become sensitized. For this reason, when a person is infested for the first time, symptoms usually do not appear for up to two months (two to six weeks). If a person has had scabies before and is therefore already sensitized to the mite and its saliva and feces, symptoms usually appear one to four days after exposure. **An infested person can still spread scabies even without symptoms.**

The itching and rash may affect much of the body. **Common sites affected include:**

- Between the fingers
- Inside of wrist
- Crease of elbow
- Armpit
- Penis
- Nipple
- Waist
- Buttocks
- Shoulder blades
In infants and very young children, the head, face, neck, palms of the hands and soles of the feet often are involved; this is not usually the case in older children and adults. **Healthcare workers may have rash on forearms, abdomen and thighs.**

The tiny, raised, crooked, grayish-white or skin-colored burrows caused by the female scabies mite tunneling just beneath the surface of the skin sometimes can be seen. Because the number of mites is often low (10 to 15 mites per person), visualizing them is sometimes difficult. They are found most often in the same areas as the scabies rash, webbing between the fingers, skin folds on the wrist, elbow or knee, and on the penis, breast or shoulder blades.

Persons with crusted scabies may not show the usual signs and symptoms of scabies, such as the characteristic rash or itching, because these patients are often those with altered immune status or neurological conditions. If the immune system is altered, the allergic reaction to the
proteins and feces of the scabies mites, which is a function of the immune system, may not occur or may be minimal. In the elderly, reactions to the mite and its feces are not inflammatory like they are in younger persons and are, therefore, muted. Due to the lack of a typical response, scabies is often missed by the healthcare provider.

**Diagnosis**

Diagnosis of scabies usually is made by physicians/dermatologists or nursing staff with experience in diagnosing scabies based on the appearance and distribution of the rash, and the presence of burrows. Whenever possible, the diagnosis should be confirmed by identifying the mite, mite eggs or fecal matter. This can be done by an experienced person obtaining skin scrapings from six different sites and examining them under a microscope. The burrows from a scabies mite can be identified by applying India ink (found in felt markers) to the site and wiping off after a few minutes with an alcohol swab. **A person can still be infested even if mites, eggs or fecal matter cannot be found.** It is very difficult to obtain a positive skin scraping from a person with typical scabies because so few mites may be present. Persons with crusted scabies will almost always exhibit a positive skin scraping because there can be up to two million mites present.
Typical Scabies

Crusted (Norwegian) Scabies

Pictures courtesy of DermNetNZ.org http://creativecommons.org/licenses/by-nc-nd/3.0/nz/
Treatment

Products used to treat scabies are called scabicides because they kill scabies mites; and some also kill eggs. Scabicides to treat human scabies are available only with a prescription from a healthcare provider. No "over-the-counter" (non-prescription) products have been tested and approved for humans. A scabicide intended for veterinary or agricultural use should **never** be used to treat humans. For a list of some products used to treat scabies in humans, see [Appendix A](#). For the proper way to apply a scabicide lotion or cream, see [Appendix B](#).

The instructions provided by the healthcare provider and/or pharmacist should always be followed carefully, as well as those contained in the box or printed on the label. A healthcare provider or pharmacist should always be contacted if there are questions about how to use the medicine. Scabicide cream or lotion is applied to all areas of the body from the neck down to the feet and toes when treating adults and older children; when treating infants and young children, scabicide lotion or cream also should be applied to the entire head and neck (avoiding the eyes and mouth) because scabies can also affect the face, scalp and neck of young children. The lotion or cream should be applied to a clean body and left on for the recommended time before washing it off, usually 8 to 14 hours. Treatment is best applied at night and washed off in the morning. Clean clothing should be worn, and clean towels and bed linens should be used after treatment. Severe cases of crusted scabies may need multiple treatments to completely eliminate the infestation and/or combination therapy with oral scabicides.

Treatment also is recommended for household members, sexual partners and close personal contacts of infested persons, particularly those who have had prolonged skin-to-skin contact. All persons should be treated within the same 24- to 48-hour timeframe in order to prevent re-infestation.
Clothing, towels and bedding used by infested persons and their household members, sexual partners, and close contacts anytime during the four days before treatment should be washed in hot water for at least 10 minutes and dried in a hot dryer for at least 20 minutes, dry-cleaned or sealed in a plastic bag for at least 10 days. Scabies mites generally do not survive more than two to three days away from human skin. Use of insecticide sprays and fumigants in living areas is not recommended. But furniture, mattresses and carpets should be vacuumed, especially if crusted scabies is suspected, and the vacuum bag should be changed after use.

Because the symptoms of scabies are due to an allergic reaction to mites and their feces, and not to the mites themselves, the rash and itching of scabies can persist for up to a month after treatment, even if the treatment was successful and all the mites and eggs have been killed. A healthcare provider may prescribe additional medication to relieve itching, if it is severe. If itching continues for more than two to four weeks after initial treatment or if new burrows, or rashes, continue to appear retreatment may be necessary. If the initial treatment includes more than one application or dose, then the two- to four-week timeframe begins after the last application or dose. Symptoms that persist for longer than two weeks after treatment can be due to several things, including:

- Incorrect diagnosis of scabies
  - Many drug reactions can mimic the symptoms of scabies and cause a skin rash and itching
  - The diagnosis of scabies should be confirmed by a skin scraping that includes observing the mite, eggs or mite feces under a microscope
- Re-infestation with scabies from a family member or other infested person if all persons and their contacts are not identified and treated at the same time
- Treatment failure caused by resistance to medication, faulty application of topical scabicides, failure to follow scabicide directions, use of topical steroid during the treatment period, or failure to do a second application when necessary
  - No new burrows should appear 24 to 48 hours after effective treatment
- Treatment failure for crusted scabies because of poor penetration of scabicide into thick, scaly skin containing large numbers of scabies mites
  - Keratolytic agents (20 to 40 percent urea and 6 percent salicylic acid) or debridement may be necessary to soften scaliness and permit penetration of scabicide
  - Repeated treatment with a combination of both topical and oral medication may be necessary to treat crusted scabies successfully
- Re-infestation from items such as clothing, towels or bedding that were not appropriately washed or dry-cleaned (this is mainly for items used by persons with crusted scabies)
Potentially contaminated items should be machine washed in hot water and
dried using the hot temperature cycle, dry-cleaned or sealed in a plastic bag for
at least 10 days

- An allergic skin rash (dermatitis)
- Exposure to household mites that cause symptoms to persist because of cross-reactivity
  between mite antigens.

**Prophylactic Treatment**

Scabies outbreaks should be treated aggressively to prevent spread in institutional settings. In
general, a person who has any skin-to-skin contact with a person who has crusted scabies
would be considered a good candidate for prophylactic (preventive) treatment along with their
close contacts.

To determine when prophylactic treatment should be given to reduce the risk of transmission,
early consultation should be sought with a healthcare provider who understands:

- The type of scabies (typical versus crusted) to which a person has been exposed
- The degree and duration of skin exposure that a person has had to the infested person
- Whether the exposure occurred before or after the infested person was treated for
  scabies
- Whether the exposed person works in an environment where he or she would be likely
to expose other people during the asymptomatic incubation period
  - For example, a nurse or caretaker who works in a nursing home or hospital often
    would be treated prophylactically to reduce the risk of further scabies
    transmission in the facility.

**Isolation**

Ohio Administrative Code (OAC) 3701-3-13 states:

“Scabies: a person with scabies shall be isolated for 24 hours following initial treatment with an
effective scabicide. A person with the manifestation of scabies known as ‘crusted scabies’ shall
be isolated until the mite can no longer be demonstrated on a scabies preparation.” Contact
precautions should be initiated immediately with any rash and maintained until diagnosis has
been made by appropriate healthcare personnel.

**Institutional Outbreaks**

Scabies can spread easily under crowded conditions where close body and skin contact is
common. Scabies outbreaks have occurred among patients, visitors and staff in institutions
such as healthcare facilities, nursing homes, extended care facilities, assisted living facilities,
rehabilitation facilities and prisons. An institutional outbreak is defined as two or more cases of
similar illness with a common exposure at an institution (e.g., correctional facility, day care center, group home, school, assisted living facility) and not considered a foodborne or waterborne disease outbreak. Child care facilities also are common sites of scabies outbreaks. These institutions can become infested when a new person is admitted with an undiagnosed infestation and does not receive immediate treatment. Institutional outbreaks can also occur because of delayed diagnosis and treatment of crusted scabies in debilitated, immunocompromised or elderly persons. The characteristic itching and rash of scabies can be absent in such persons leading to frequent misdiagnosis, delayed or inadequate treatment, and continued transmission.

In institutions, scabies often is not recognized until it begins to appear among staff and other persons at the institution. A scabies outbreak suggests that transmission has been occurring within the institution for several weeks to months, increasing the likelihood that some infested staff or other persons may have had time to spread scabies elsewhere in the community, including to other facilities. Measures to control scabies in an institution depend on factors such as:

- The number of cases that are diagnosed or suspected
- The length of time the infested person has been at the institution while undiagnosed and/or unsuccessfully treated
- Whether any of the cases are crusted scabies
  - Because it is so highly transmissible, crusted scabies requires rapid and aggressive detection, diagnosis, infection control, and treatment measures to prevent and control spread.

Local and/or state health departments can provide guidelines for preventing and controlling scabies outbreaks. Below are suggestions for developing guidelines for preventing, detecting and responding to scabies in an institution.

**Measures for the Prevention and Control of Typical Scabies Outbreaks in Institutions**

All institutions should have a scabies prevention and control program that involves the entire staff. [Appendix C](#) is the management checklist. This prevention and control program should include:

- Written policies and procedures for prevention and control of scabies
- Staff training requirements
  - Implement an institution-wide information program to educate all staff, including management and support staff, about scabies, the scabies mite, how scabies is and is not spread, and how scabies outbreaks can be prevented and controlled (see [Scabies Fact Sheet](#))
• Use of standard precautions including:
  o Good hand hygiene
  o Use of personal protective equipment with suspicious rashes
  o Immediate disposal of all gloves after a single use
• Routine hygiene care (for institutions that house persons for any length of time)
  o Ensure weekly bathing, at a minimum
  o Ensure that clothes are changed daily and laundered routinely
  o Monitor and assess skin for changes and/or abnormalities when assisting with
    bathing and clothing changes
  o Notify healthcare provider in charge immediately of any rashes noted during
    assessment
• Surveillance - general
  o Develop and implement an active program for early detection of infested
    persons, including staff
    ▪ Perform skin assessments, including assessments of the nails and scalp,
      upon admission and periodically throughout a person’s stay
    ▪ Document and immediately report all suspicious rashes or skin changes
      to the healthcare provider in charge, even if characteristic signs or
      symptoms of scabies (itching and rash) are absent (see Appendix D for
      sample data sheet)
      • Immediately initiate contact isolation for any person suspected of
        having scabies until scabies has been ruled-out
      • Have a healthcare provider (preferably a dermatologist) evaluate
        any suspect case, and obtain skin scrapings if possible
    ▪ Screen all new admissions for scabies
• Surveillance – when a case of scabies is identified
  o Identify all persons including patients/residents, staff, students, volunteers and
    visitors that are likely to have been exposed to scabies
    ▪ Use interviews, self-administered questionnaires, direct observation
      and/or chart reviews to help identify contacts (see Appendix E and
      Appendix F for sample line lists)
      • Contacts are defined as persons with prolonged skin-to-skin
        contact, including household, sexual partners and close personal
        contacts
    ▪ Time frame should date back six weeks for contact tracing from when
      scabies infestation is noted
  o Screen all contacts for scabies
  o Ascertain if an outbreak of scabies exists
If an additional case or cases are identified, see the section on Reporting

- Maintain heightened surveillance for at least two months after the case is identified to ensure that transmission has not occurred
- In an outbreak situation, maintain heightened surveillance until at least two months after the last case is identified to ensure that ongoing transmission has stopped

Diagnostic services

- Ensure that adequate diagnostic services are available
- Ensure that someone on staff is trained and experienced in obtaining and examining a skin scraping to identify scabies mites
- Consult with an experienced dermatologist for assistance in differentiating skin rashes and confirming the diagnosis of scabies

Control and treatment – when a case of scabies is identified

- Notify other institutions to or from which infested or exposed persons may have transferred, if applicable
- Maintain records with the infested person’s name, age, sex, room number, roommate(s) name(s), skin scraping status and result(s), and name(s) of all persons who provided hands-on care to the infested person before implementation of infection control measures
  - Symptoms can take up to two months to appear in exposed persons
- Avoid direct skin-to-skin contact with any person who has, or is suspected to have, scabies
- Use appropriate isolation and infection control practices, which include the following:
  - Wear gloves, gown and shoe covers when giving hands-on care to any person who is suspected or confirmed to have scabies
  - Wash hands thoroughly after providing care to any person with soap and water
  - Avoid skin-to-skin contact with persons who have scabies for at least 24 hours after application of an effective scabicide treatment
- Identify and treat all persons (e.g., staff, relatives, friends, patients) that had prolonged, direct skin-to-skin contact with the infested person before he or she was treated
  - Offer treatment to household members (e.g., spouses, children) of staff who are receiving scabies treatment
  - Keep infested or exposed staff from returning to work until the day after receiving a dose of treatment
• Instruct symptomatic staff that provide hands-on care to use disposable gloves for several days after treatment until they are sure they are no longer infested
  o If itching is still present more than two to four weeks after treatment or if new burrows or pimple-like rash lesions continue to appear, retreatment may be necessary
• Environmental disinfection - general
  o Establish appropriate procedures for environmental disinfection
  o Establish and rigorously follow an environmental cleaning schedule
  o Change and launder linens for all persons weekly, at a minimum
  o Routinely clean and disinfect all patient care items such as gait belts, walkers, vital signs machines, blood pressure cuffs, lifts and wheelchairs if applicable
• Environmental disinfection – when a case of scabies is identified
  o Machine wash and dry all clothing, towels, and bedding of persons with scabies using the hot water and hot dryer cycles
    ▪ Dry cleaning is also appropriate
    ▪ Put items that cannot be machine washed and dried or dry cleaned in a sealed plastic bag for 10 days
  o Discard any soaps, creams, lotions or ointments used prior to effective treatment
  o Do not use insecticide sprays and fumigants
  o Clean and vacuum the room
    ▪ Because persons with crusted scabies are considered very infectious, vacuum furniture and carpets in rooms used by these persons
    ▪ Dispose of vacuum bag after use in the room of a person with scabies
• Communication—when a case of scabies is identified
  o Implement an institution-wide information program to reinforce past training to all staff about scabies, the scabies mite, how scabies is and is not spread, and how scabies outbreaks can be prevented and controlled (see Scabies Fact Sheet)
  o Review epidemiologic and clinical data to determine if an outbreak exists and to identify risk factors for spread
  o Establish procedures for identifying and notifying at-risk persons, including staff, who are no longer at the institution (see Appendix G and Appendix H for sample letters)
  o Ensure a proactive employee health service approach to scabies including providing dermatologic consultation for employees and, when appropriate, their household members
  o Maintain an open and cooperative attitude between management and staff.
Additional Measures for Prevention and Control of Crusted Scabies in Institutions

Measures for prevention and control when one or more cases of crusted scabies is identified in an institution includes everything listed in the previous section, but there must be more rapid and aggressive detection, diagnosis, infection control and treatment measures because this form of scabies is so highly transmissible. **Unrecognized crusted scabies often is the source of institutional outbreaks of scabies. Infection control personnel and dermatologists should be involved as soon as scabies is suspected in an institution** (Appendix C management checklist).

Implement the following until the person with crusted scabies is successfully treated (skin scrapings are negative for live mites):

- Place the person on strict contact precautions
  - Wear gown, gloves and shoe covers to attend to the person’s needs for housekeeping duties and for handling of laundry
- Isolate the person from other persons that do not have crusted scabies
  - Assign the person to a private room or to a room with another person with crusted scabies
- Have designated staff to care only for these persons
  - Assigning a cohort of caretakers to care only for persons with crusted scabies can reduce the potential for further transmission
  - Other duties for these employees can include record keeping and filing
- Restrict contact with visitors
  - If restriction of visitors is not possible, visitors should take the same precautions (wearing gown and gloves) as employees
- Remove upholstered furniture covered with cloth fabric from the room or replace it with furniture covered in plastic or vinyl; mattresses must be covered with plastic or vinyl for at least 7 days
- Vacuum the person’s room daily and upon discharge with a vacuum cleaner designated for this room alone
  - Dispose of vacuum bag after use.

Identify and treat all patients/residents, staff, students, volunteers and visitors who may have been exposed to a person with crusted scabies or to clothing, bedding or furniture used by such a person. See Appendix E and Appendix F for examples of line lists.

- Strongly consider treatment even in uncertain circumstances because of the complexity of controlling an institutional outbreak and the low risk associated with treatment
- Treat all suspected and confirmed cases as well as all potentially exposed patients/residents, staff, students, volunteers, visitors and family members at the same time, in the same 24 to 48-hour period to prevent re-exposure.
Persons with crusted scabies generally require treatment at least twice, one week apart. (See Appendix A for a list of treatments and Appendix B for instructions on treatment.)

**Reporting Scabies**
While scabies is not an individually reportable disease in Ohio, outbreaks are reportable. An outbreak is defined as two or more cases identified in patients, residents, inmates, classmates, staff, volunteers, visitors, coworkers, etc. during a two-month period. Report by the end of the next business day to the local health department in whose jurisdiction the facility is located, any suspected or confirmed outbreak of scabies (Ohio Administrative Code Chapter 3701-3). Go to [https://odhgateway.odh.ohio.gov/lhdinformationsystem/Directory/GetMyLHD](https://odhgateway.odh.ohio.gov/lhdinformationsystem/Directory/GetMyLHD) and enter the facility address to find the appropriate local health department. Report the suspected or confirmed outbreak to the Ohio Department of Health (ODH) Office of Health Assurance and Licensing if the facility is licensed or certified by ODH.

Please provide the following information when reporting a suspected or confirmed outbreak to the local health department:

- Facility name
- Complete facility address (including county)
- Telephone number with area code
- Name of facility contact
- Facility type (nursing home, assisted living, prison, school, etc.)
- Number of cases (confirmed, probable and suspect)
- Age, sex, race, ethnic origin of persons involved
- Initial exposure date
- First onset of symptoms
- Date of most recent case
- Duration of symptoms
- Confirmed diagnosis date
- Pertinent laboratory results
- Location of cases in facility (floor, wing, unit, room, etc.)
- Identity of reporting person with name, address and phone number if different from above
- Control/prevention measures put into place
Appendix A: Products Used to Treat Scabies

Typical scabies: one or more of the following may be used

1. **Permethrin cream 5%** (Elimite*) Permethrin is approved by the U.S. Food and Drug Administration (FDA) for the treatment of scabies in persons who are at least age 2 months. Permethrin is a synthetic pyrethroid similar to naturally occurring pyrethrins, which are extracts from the chrysanthemum flower. Permethrin is safe and effective when used as directed. Permethrin kills the scabies mite and eggs. Permethrin is the drug of choice for the treatment of scabies. Two (or more) applications, each about one week apart, may be necessary to eliminate all mites. Children 2 months or older can be treated with permethrin.

2. **Crotamiton lotion 10% and Crotamiton cream 10%** (Eurax*; Crotan*) Crotamiton is approved by the FDA for the treatment of scabies in adults; it is considered safe when used as directed. Crotamiton is not FDA-approved for use in children. Frequent treatment failure has been reported with crotamiton.

3. **Sulfur (5%-10%)** Sulfur in an ointment base (petrolatum) is safe for topical use in children, including infants under 2 months. The odor and cosmetic quality may make it unpleasant to use.

4. **Lindane lotion 1%** Lindane is an organochloride. Although FDA-approved for the treatment of scabies, lindane is not recommended as a first-line therapy. Overuse, misuse or accidentally swallowing lindane can be toxic to the brain and other parts of the nervous system. Its use should be restricted to patients who have failed treatment with or cannot tolerate other medications that pose less risk. Lindane should not be used to treat premature infants; persons with a seizure disorder; women who are pregnant or breast feeding; persons who have very irritated skin or sores where the lindane will be applied; infants, children and the elderly; and persons who weigh less than 110 pounds.

5. **Ivermectin** (Stromectol*) Ivermectin is an oral antiparasitic agent approved for the treatment of worm infestations. Evidence suggests that oral ivermectin may be a safe and effective treatment for scabies; however, ivermectin is not FDA-approved for this use. Oral ivermectin should be considered for patients who have failed treatment with or who cannot tolerate FDA-approved topical medications for the treatment of scabies. If used for classic scabies, two doses of oral ivermectin (200µg/kg/dose) should be taken with food, each approximately one week apart. The safety of ivermectin in children weighing less than 15 kg and in pregnant women has not been established. Scabies experts recommend taking ivermectin with a meal to increase bioavailability.

Crusted scabies: both oral and topical agents should be used
1. **Ivermectin** (Stromectol) For crusted scabies, ivermectin should be administered together with a topical agent. Oral ivermectin (200µg/kg/dose) should be taken with food. Depending on infection severity, ivermectin should be taken in three doses (approximately days 1, 2 and 8), five doses (approximately days 1, 2, 8, 9 and 15) or seven doses (approximately days 1, 2, 8, 9, 15, 22 and 29).

2. **Permethrin cream 5%** (Elimite) Permethrin is the drug of choice for the treatment of scabies. Topical permethrin should be administered every two to three days for one to two weeks to treat crusted scabies.

3. **Benzyl benzoate 25% (with or without tea tree oil)** Benzyl benzoate may be used as an alternative topical agent to permethrin. However, this agent may cause immediate skin irritation. Lower concentrations may be used in children (10% or 12.5%).

4. **Keratolytic cream** A topical keratolytic cream may also be used to help reduce the crusting of the skin and aid in the absorption of the topical permethrin or benzyl benzoate.
Appendix B: Instructions for Treating a Person with a Scabicide

1. Follow all directions provided by the healthcare provider and pharmacist along with the printed instructions that are included with the prescription medication.

2. Wear full gown and gloves to prevent any skin-to-skin contact.

3. Bathe the person as usual and allow his or her skin to dry and cool.

4. Change all bed linens and prepare clean, freshly laundered clothes.

5. Cut/trim the person’s finger nails and toe nails and any excess skin around them.

6. With gloved hands, apply the scabicide ointment to the person’s entire body covering all areas including between toes and fingers; under the finger and toe nails; and in between folds of the skin, umbilicus, palms and soles of feet, hair line, and neck creases.
   a. If the scabicide is washed off during handwashing, toileting or perineal care, it must be reapplied.
   b. Prior treatment failure may be an indication to include the head upon retreatment.

7. For infants, young toddlers, the elderly and the immunocompromised, apply scabicide to the head (forehead, temples and scalp).
   a. Pay close attention to the area behind the ears.
   b. Do not get the scabicide near the eyes or mouth.

8. Once the medication has been on the skin for the allotted amount of time, bathe the person to remove the medication.
   a. Scrub the entire body with soap and water to ensure that all medication residue is removed.
**Appendix C: Scabies Outbreak Management Checklist**

### Scabies Outbreak Management Checklist

#### Outbreak Interventions

<table>
<thead>
<tr>
<th>Communication</th>
<th>Completed</th>
<th>Date</th>
<th>Signature</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notification of facility administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notification of infection prevention and control team or healthcare provider in charge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outbreak reported to the local health department</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>For long-term care facilities, outbreak reported to the Ohio Department of Health Office of Health Assurance and Licensing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notification of all potential contacts (e.g., other patients, residents, students, staff, volunteers, relatives, friends, visitors)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility closed to new admissions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility reopened to new admissions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Investigation and Monitoring

<table>
<thead>
<tr>
<th>Completed</th>
<th>Date</th>
<th>Signature</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptomatic staff removed from work and referred to employee health and/or evaluated by a clinician</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Symptomatic persons placed in contact isolation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient line list completed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee line list completed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contact identification list compiled</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin scrapings obtained for symptomatic persons</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient line list completed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily skin assessments documented on all at-risk persons in the care of the institution/facility</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Treatment

<table>
<thead>
<tr>
<th>Completed</th>
<th>Date</th>
<th>Signature</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptomatic persons treated with scabicide</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prophylactic treatment offered to contacts, including staff, family and visitors</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Environmental Cleaning

<table>
<thead>
<tr>
<th>Completed</th>
<th>Date</th>
<th>Signature</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhanced environmental cleaning done throughout the outbreak period</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clothing, bath linens and bed linens of affected persons properly cleaned or bagged</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soaps, creams, lotions or ointments used prior to effective treatment discarded</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Education

<table>
<thead>
<tr>
<th>Completed</th>
<th>Date</th>
<th>Signature</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training provided to all staff on the signs and symptoms of scabies and prevention and control measures</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix D: Sample Data Sheet

Data Collection Form for Scabies

<table>
<thead>
<tr>
<th>Today’s date (month, day, year):</th>
<th>Person completing form:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong><strong>/</strong></strong>/____</td>
<td></td>
</tr>
</tbody>
</table>

Location of outbreak:

Identifying Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Date of Birth:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong><strong>/</strong></strong>/____</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sex:</th>
<th>Age:</th>
<th>Race</th>
<th>Hispanic or Latino</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td></td>
<td>White</td>
<td>Yes</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td>Black</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unknown</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Asian/ Pacific Islander</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Present Address:</th>
<th>Relationship to Agency/Facility:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Resident (Date of admission <strong>/</strong>/____)</td>
</tr>
<tr>
<td></td>
<td>Staff (Job title _____________________)</td>
</tr>
<tr>
<td></td>
<td>Student</td>
</tr>
<tr>
<td></td>
<td>Visitor (room visiting_______________)</td>
</tr>
<tr>
<td></td>
<td>Volunteer (area_____________________)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Agency/Facility name (if applicable)</th>
<th>Room number (if applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Street</td>
</tr>
<tr>
<td></td>
<td>City</td>
</tr>
<tr>
<td></td>
<td>State</td>
</tr>
<tr>
<td></td>
<td>Zip</td>
</tr>
<tr>
<td></td>
<td>Phone number</td>
</tr>
</tbody>
</table>

Symptoms, Signs and Significant Conditions

<table>
<thead>
<tr>
<th>Date of symptom onset:</th>
<th>Underlying conditions:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong><strong>/</strong></strong>/____</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Does the person have:</th>
<th>If yes, please indicate location:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rash</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td></td>
</tr>
</tbody>
</table>
Exposure History

Do you know of others who have had similar symptoms?  
Yes  [ ]  No  [ ]  Unknown  [ ]

If yes, describe symptoms, time period of symptoms and relationship to this patient:

Has the person been traveling (overnight or day trip) in the last two months?  
Yes  [ ]  No  [ ]  Unknown  [ ]

If yes, describe:

Was the person transferred to or from another facility in the last two months?  
Yes  [ ]  No  [ ]

Unknown  [ ]

If yes, to where?

_________________________________________________________________________________

from where?

_________________________________________________________________________________
### Diagnosis

Was the person:

- [ ] Yes (Date: ____/____/_____)  
- [ ] No  
- [ ] Unknown

If yes, was the person diagnosed with scabies?  
- [ ] Yes  
- [ ] No  
- [ ] Unknown

Did the person have a skin scraping?  
- [ ] Yes (Date: ____/____/_____)  
- [ ] No  
- [ ] Unknown

If yes, what was the result?  
- [ ] Positive  
- [ ] Negative  
- [ ] Unknown

### Treatment

Was the person treated for scabies?  
- [ ] Yes  
- [ ] No  
- [ ] Unknown

If yes:

- Date of treatment 1: ____/____/_____
- Medication used for treatment 1: ________________________________

- Date of treatment 2: ____/____/_____
- Medication used for treatment 2: ________________________________

### General Notes/Comments
**Appendix E: Sample Staff Line List**

Scabies Contact Identification List

**Residents, Staff, Students, Visitors and/or Volunteers**

<table>
<thead>
<tr>
<th>Agency/Facility:</th>
<th>Date of initial report:</th>
</tr>
</thead>
</table>

**Primary case (Name):**

<table>
<thead>
<tr>
<th>Contact name/ID</th>
<th>Age</th>
<th>Sex</th>
<th>Room number (if applicable)</th>
<th>Type of contact</th>
<th>Signs or symptoms of scabies (Y, N) / date of onset</th>
<th>Healthcare provider diagnosis of scabies (Y, N, did not see provider)</th>
<th>Scraping result (+, -, not done)</th>
<th>Case category (confirmed, probable, suspect)</th>
<th>Treatment Date 1 / medication used</th>
<th>Treatment Date 2 / medication used</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

* RES= resident, STF = staff, VIS=visitor, VOL= volunteer
### Appendix F: Sample Patient Line List
Scabies Contact Identification List

**Patient Line List Template**

<table>
<thead>
<tr>
<th>Agency/Facility</th>
<th>Date of initial report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case Name or ID</td>
<td>Admit date</td>
</tr>
<tr>
<td></td>
<td>Transferred from another facility (Y, N)</td>
</tr>
<tr>
<td></td>
<td>If Y, facility name / date</td>
</tr>
<tr>
<td></td>
<td>Age</td>
</tr>
<tr>
<td></td>
<td>Room number</td>
</tr>
<tr>
<td></td>
<td>Location of rash</td>
</tr>
<tr>
<td></td>
<td>If Y, date</td>
</tr>
<tr>
<td></td>
<td>If done, date</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**ODH-IDCM**

SCABIES Section 6/Page 27

Revised 2/2019
Appendix G: Sample Patient Letters Related to Scabies Outbreaks

Facility Letterhead

Date

Dear insert patient’s name:

During your recent hospitalization, you may have been exposed to scabies. This does not mean that you will get scabies, but we want to alert you to the potential exposure so that you can monitor yourself and get treatment as soon as possible, if needed. We are working in collaboration with insert your local public health department name and want to make you aware of the appropriate follow-up steps should scabies occur.

Scabies is a contagious skin condition caused by a mite that is transmitted through skin-to-skin contact with someone who has it. The primary symptoms are a rash and intense itching, especially at night. Scabies can appear anywhere on the body, but are usually found on the hands, inside of wrists and elbows, breasts, armpits, waistline, and groin. It usually takes four to six weeks from the time of exposure to the time symptoms develop; if you have had scabies before, symptoms may develop in as few as one to four days. Persons who have scabies are infectious to others, even before symptoms develop. Scabies is diagnosed by a healthcare provider who will look at the rash and/or take a scraping from the skin. Usually, scabies is easily treated with a medicated cream or oral medication prescribed by your healthcare provider.

Insert your local public health department name recommends that you check your skin daily for two months. If a rash and/or itching develop, notify your healthcare provider as soon as possible, or you may call me at ________________ if you have any questions.

Thank you for your cooperation.

Sincerely,

[Name, Title]
Appendix H: Sample Provider Letter Related to Scabies Outbreaks

Facility Letterhead

Date

Dear insert healthcare provider’s name:

Our facility is currently experiencing an outbreak of scabies. The period of potential exposure was from _________ to _________. Persons whose last date of exposure was more than six weeks ago should be questioned regarding symptoms consistent with scabies. Patients found to be symptomatic should be evaluated and treated as necessary. Family members and other close contacts should receive prophylactic scabies treatment at the same time the patient is treated. Permethrin 5% cream (Elimite®) is now the recommended agent for treatment of scabies. Patients whose last date of exposure was less than six weeks from this date should be treated with topical scabicide or monitored for symptoms until the six-week period is over. Should one of these persons become symptomatic, close contacts should receive treatment or monitoring as well.

Enclosed is a list of your patients who are considered exposed and their last date of exposure. Please notify ____________________ at ____________ if any of your patients develop scabies.

Thank you for your assistance.

Sincerely,

[Name, Title]
Scabies Fact Sheet
FOR PATIENTS, FAMILY AND VISITORS

What is scabies? Scabies is an infestation of the skin by a mite. Female scabies mites burrow into the top layer of the skin where they live, lay eggs and leave fecal matter (poop).

Who gets scabies? Anyone can get scabies no matter what their income, age, sex, race or standards of personal hygiene (cleanliness). Groups of people with scabies, or outbreaks, sometimes are seen in healthcare facilities, institutions and child care centers.

How is scabies spread? Scabies mites are spread by direct, skin-to-skin contact with an infested person. Indirect spread from undergarments, towels or bedding of an infested person can occur. Scabies can also be spread during sexual contact.

What are the symptoms of scabies? The most common symptom of scabies is a pimple-like “scabies rash” with intense itching, especially at night. The areas of the skin most affected by scabies include the webs and sides of the fingers, wrists, elbows, armpits, waist, thighs, genitalia, nipples, breasts and lower buttocks. The tiny, raised, crooked, and grayish-white or skin-colored burrows caused by the female scabies mite tunneling just below the surface of the skin sometimes can be seen.

How soon do symptoms appear? In persons who have never had scabies before, symptoms usually appear two to six weeks after contact with the mite. Persons who have had scabies before may show symptoms within one to four days. Elderly persons and persons with weakened immune systems may not have itching, so any unusual skin problem in these persons should be checked by a healthcare professional.

When and for how long is a person able to spread scabies? A person is able to spread scabies from the moment they get exposed to the mite until all the mites and eggs are destroyed by treatment.

How is scabies diagnosed? Scabies is diagnosed by a healthcare professional looking at the rash and/or by taking a skin scraping. A skin scraping is a procedure where the skin over a burrow is scraped with a blade and the scrapings are examined under a microscope to see if there are any mites, eggs or mite feces (poop). A person can have a negative skin scraping and still have scabies.
What is the treatment for scabies? Scabies is treated using a medicated cream or lotion prescribed by a healthcare provider. The cream or lotion is applied to the whole body except the head. When applied as directed, this medication is approximately 90 percent effective in getting rid of scabies after one application. All persons who have had skin contact with an infested person including family members, roommates, direct care providers and sexual contacts should also be treated. All clothes and bath and bed linens worn or used in the four days before treatment must be washed in hot water and dried in a hot dryer. If they cannot be washed this way, they must be dry cleaned or placed in a sealed plastic bag for a week. Clean clothes must be worn, and clean bath and bed linens used after treatment. A medication that is taken by mouth may also be prescribed.

How soon after treatment will the symptoms resolve? Itching may continue for two to three weeks, but this does not mean that a person still has scabies. Healthcare providers may prescribe other medication for the itching if it is severe. No new burrows or rashes should appear 24 to 48 hours after treatment.

What can be done to prevent the spread of scabies? Avoid physical contact with infested persons and their belongings, especially clothing and bedding. Early recognition, diagnosis and treatment of infested persons and their contacts is extremely important to prevent the spread of scabies.

Can a person get scabies again? Yes. In fact, the symptoms will appear more quickly if a person gets scabies again.

Should persons with scabies be excluded from school or work? Yes, but only until 24 hours following the initial treatment with an effective scabicide (medicine that kills scabies mites and eggs). A person with "crusted scabies" must be excluded until the scabies mite can no longer be seen on a skin scraping. Crusted scabies is a severe form of scabies. It causes thick crusts of skin that flake or peel off and contain large numbers of scabies mites and eggs making them much easier to spread. Crusted scabies more often are found in persons who are institutionalized, debilitated or have weakened immune systems.

What are the health problems associated with scabies? Usually none, but sometimes skin infections from scratching may occur.
Resources:


