

PREVENTION AND CONTROL OF SCABIES IN CALIFORNIA HEALTHCARE SETTINGS

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Contents

INTRODUCTION.....	1
BIOLOGY OF THE SCABIES MITE.....	1
CLINICAL PRESENTATION.....	2
Typical Scabies	2
Atypical or Crusted Scabies.....	2
EPIDEMIOLOGY OF SCABIES.....	3
Transmission	3
Incubation Period	3
Period of Communicability	3
SCABIES PREVENTION, CONTROL, AND OUTBREAK MANAGEMENT PROGRAM ..	4
INVESTIGATING A SCABIES OUTBREAK.....	4
Outbreak Definition.....	4
Confirm the Diagnosis.....	5
Identification of Contacts of Symptomatic Case(s).....	5
ACTIVATION OF THE SCABIES OUTBREAK MANAGEMENT PLAN	6
Notification of Key Personnel	6
Staffing the Infection Control Department.....	6
Notification of Healthcare Personnel and Volunteers.....	7
Notification of Physicians	7
Notification of Current Patients/Residents and Visitors	7
Searching for Source or Index Case	7
Protective Equipment and Pharmacy Supplies	8
CONTROLLING THE OUTBREAK	8
Isolation of Patients/Residents	8
Treatment Schedules.....	9
Controlling Transmission (Typical and Atypical Scabies)	9
Treatment Options for Symptomatic Cases	11
Treatment of Asymptomatic Patient/Residents, Healthcare Personnel, Volunteers, and Visitors	12
Post Treatment Assessment.....	12
REPORTING OUTBREAKS.....	13
SUMMARY	13
ACKNOWLEDGMENTS.....	13

REFERENCES	14
APPENDIX A – PROCEDURE FOR SKIN SCRAPING	15
APPENDIX B1 – INDEX CASE HISTORY AND CONTACT IDENTIFICATION (Symptomatic)	17
APPENDIX B2 – INDEX CASE HISTORY AND CONTACT IDENTIFICATION (Asymptomatic)	18
APPENDIX B3 – SYMPTOMATIC CONTACT IDENTIFICATION LIST	19
APPENDIX B4 – ASYMPTOMATIC CONTACT IDENTIFICATION LIST	20
APPENDIX C1 – SAMPLE MEMORANDUM TO STAFF MEMBERS	21
APPENDIX C2 – SAMPLE MEMORANDUM TO STAFF PHYSICIANS	23
APPENDIX C3 – SAMPLE LETTER TO PATIENTS/RESIDENTS	25
APPENDIX C4 – SAMPLE MEMORANDUM TO MANAGERS	26
APPENDIX D – SCABIES FACT SHEET	28
APPENDIX E – ALTERNATIVE TREATMENT FOR ATYPICAL (CRUSTED) SCABIES	30

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INTRODUCTION

Scabies is a parasitic infestation of the skin caused by the human itch mite, *Sarcoptes scabiei* var. *hominis*. The actual incidence of scabies in California is unknown because single occurrences of infestation are not reportable to local health departments. Scabies is generally considered a nuisance in young, healthy persons; however, infestations in elderly and/or immunosuppressed individuals tend to be more severe and can lead to health complications. Healthcare facilities (HCF) can provide ideal environments for scabies transmission, and because signs and symptoms associated with infestation can take 2-6 weeks to manifest, person-to-person transmission may occur before a diagnosis is suspected and/or confirmed. The identification of scabies in patients/residents, healthcare personnel (HCP), volunteers, and visitors of HCF can result in action measures ranging from simple treatment of selected individuals to administration of mass prophylactic treatment and temporary closures to new admissions.

This document was developed specifically for HCF by the California Department of Public Health as a resource to aid in making rational and informed decisions for scabies prevention, control, and outbreak management. Healthcare facilities are encouraged to use the recommendations in this document to develop proactive policies and procedures to improve the health and safety of employees and the persons served by the facility.

BIOLOGY OF THE SCABIES MITE ⁽¹⁻³⁾

Infestation begins when one or several pregnant female mites are transferred from the skin of an infested person to the skin of an uninfested person. Following transfer, the female mites wander haphazardly around the surface of the skin for several hours at the speed of 1 inch per minute before selecting a suitable burrow site. Once a site is selected, mites use their mouth and legs to tear into the surface of the skin. A saliva-like substance is also secreted which aids in the burrowing process by dissolving skin cells. When a burrow is complete, a female will lay 2-3 eggs in the burrow. This cycle is repeated many times during the 1-2 month life span of adult females.

The eggs progress through larval and nymphal stages to adults in 10 to 17 days. Larval mites hatch from eggs in 3-4 days. The larvae migrate to the surface of the skin within a day after hatching, dig a shallow burrow, and feed on fluids contained in skin cells. Over the next 3-4 days, the outer skin layer of the larvae is shed (molt) and the mites develop into sexually immature nymphs (young adults). A second and final molt occurs 4-6 days later resulting in sexually mature male and female adult mites. The male mites have a very short life span (1-2 days) spent seeking out unmated females. Although mature females can lay up to 2-3 eggs per day, fewer than 10% reach the adult stage. Most of the eggs are removed or destroyed during bathing, scratching, or rubbing of the skin.

Figures are available from the [U.S. Centers of Disease Control and Prevention \(CDC\) scabies biology webpage](https://www.cdc.gov/parasites/scabies/biology.html) (<https://www.cdc.gov/parasites/scabies/biology.html>).

CLINICAL PRESENTATION (2, 3)

Scabies infestations generally present clinically as typical (classic, regular) or atypical (crusted). The severity of symptoms resulting from scabies infestation is related to the number of mites residing on the skin as well as the length of time mites have been present on the body. Healthy persons with typical scabies generally have 10-15 live mites on their skin at any given time. If diagnosis and treatment are delayed, the number of live mites can increase resulting in heavier infestations. Atypical or crusted scabies can occur when treatment has been delayed for many months. These atypical infestations are characterized by thick, crusted lesions imbedded with thousands to millions of live mites. Atypical or crusted scabies is more commonly reported in the elderly, in immunocompromised individuals such as those with human immunodeficiency virus (HIV)-infection and T cell leukemia, or persons who have conditions that prevent them from itching and/or scratching (spinal cord injury, paralysis, loss of sensation, mental debility).

Typical Scabies

The most common and earliest symptom of scabies in infested persons is complaint of pruritus (itching) that intensifies at bedtime. Pruritus is a cell-mediated hypersensitivity (allergic) response to mites, eggs, and feces imbedded in the skin. In previously infested and sensitized persons, pruritus may be noticeable as soon as 1-4 days following reinfestation. Skin lesions are generally seen on the hands, wrists, elbows, folds of armpits, female breasts, and male genitals. In HCF, bedridden patients/residents may have lesions on the areas of the skin having contact with sheets such as the back and buttocks.

In typical scabies, the rash is generally characterized by red, raised bumps (papules). Pustules, burrows, blisters, or nodules are seldom seen because the skin is often excoriated due to the intensity of itching and scratching. Burrows can sometimes be visualized with the assistance of a magnifying lens and will appear as short, wavy, elevated lines of red skin.

Atypical or Crusted Scabies

If left untreated, a heavy infestation involving thousands to millions of mites may develop leading to extensive hyperkeratotic skin lesions. This presentation, referred to as atypical or crusted scabies, is considered highly contagious and mites are easily shed into the environment in skin scales and flakes.

As the infestation progresses, the rash may mimic other dermatological conditions such as those associated with eczema, drug reaction, impetigo, folliculitis, dermatitis herpetiformis, pyoderma, tinea, pityriasis, psoriasis, syphilis, mycosis fungoides, lupus, acute urticaria, insect bites, and contact dermatitis. The excoriated skin lesions may become infected with microorganisms such as *Staphylococcus aureus* or beta hemolytic streptococci. This may contribute to the misdiagnosis of scabies because physicians may attribute the acute inflammatory condition to pyoderma as opposed to a secondary bacterial infection associated with scabies.

EPIDEMIOLOGY OF SCABIES

Transmission

The scabies mite is generally transmitted from one person to another by direct contact with the skin of an infested person. For example, sporadic scabies is often transmitted during sexual contact. Children may transmit scabies to siblings who share common living quarters, to their parents during normal physical contact such as hugging, bathing, or bed making, and to other children in schools through holding hands. Scabies may also be acquired by wearing an infested person's clothing (fomites) such as sweaters, coats, or scarves.

The role of inanimate objects such as fabric covered chairs and sofas will play little, if any, role in the transmission of scabies because of the low number of mites in typical infestations and because mites do not survive long off the host. Mites only live for a few hours on dry surfaces, clothing, and bedding, and up to 2-3 days under ideal conditions of temperature and humidity. However, persons with atypical or crusted scabies can shed so many mites into the environment that contaminated objects may significantly contribute to transmission.

In HCF, scabies may be introduced by a newly admitted patient/resident with an unrecognized infestation or by HCP, volunteers, or visitors who have been in contact with an infested person in the home or community. Most outbreaks in HCF are initiated by admission of a patient/resident with unrecognized atypical or crusted scabies and subsequent transmission by direct skin-to-skin contact or fomites to multiple healthcare personnel. Activities such as performing physical assessments, bathing, and changing a patient's/resident's soiled linen are conducive to transmission because physical contact is often prolonged. Transmission may also occur between patients/residents during social or recreational activities. Transmission is facilitated by the delay in the development of symptoms. Further delay in diagnosis and treatment of these secondary cases, who become contagious during this time, fuels the outbreak.

Incubation Period

In healthy persons with no prior history of infestation, there will be no signs or symptoms immediately following exposure, nor during the initial 2-6 weeks post-exposure. If a person has been infested with scabies before, symptoms may be experienced within 1-4 days after reinfestation due to prior sensitization to the mite and its saliva and feces. Persons exposed to an individual with atypical or crusted scabies may experience signs and symptoms in as little as a few days owing to contact with an extremely large number of mites.

Period of Communicability

A person with scabies should be considered infectious, even in the absence of symptoms, until effective treatment is given.

SCABIES PREVENTION, CONTROL, AND OUTBREAK MANAGEMENT PROGRAM

All HCF should develop, implement, and periodically evaluate a scabies prevention, control, and outbreak management program. The program should be developed and approved by an infection control committee and designate a physician, such as the medical director, to act as the Infection Preventionist (IP). This physician should be given the authority to notify attending physicians and HCP, perform diagnostic procedures such as skin scrapings (see Appendix A), and order prophylactic and therapeutic scabicide treatments for exposed patients/residents. The IP should be responsible for preventing or managing an outbreak through treatment of scabies infestations, identification and treatment of potentially exposed persons, post-treatment assessments, and assessments of treatment failures.

The scabies prevention, control, and outbreak management program should include training all physicians, nurses, and other HCP to recognize and report any patient/resident with signs and symptoms consistent with scabies infestation. In addition, all HCP and volunteers should be instructed to report any potential exposure to scabies in the home or community. The elements of the approved program should be carefully reviewed with all HCP and volunteers prior to implementation, and annually thereafter. The program also should be reviewed with all new HCP and volunteers and/or during new employee orientation.

For all new admissions, an assessment of the skin, hair, and nail beds should be conducted. Pruritus, rashes, and skin lesions should be documented and brought to the attention of the nursing supervisor and the attending physician. Contact isolation precautions should be instituted until the suspected (or preliminary) diagnosis has been confirmed and appropriately treated or ruled out.

INVESTIGATING A SCABIES OUTBREAK

The primary goal of an outbreak investigation is to identify factors that contributed to the outbreak and to take corrective action to prevent further transmission of scabies mites.

Outbreak Definition

An “outbreak of scabies” can be defined as an increase in the incidence of new cases within a defined period of time and within a defined geographical location (e.g., nursing unit, one floor or one wing, a department or, in some cases, the entire HCF). Depending on individual infection control committee decisions, an “outbreak of scabies” might be defined as two or more confirmed cases or 1 confirmed case and at least 2 suspect cases occurring among patients/residents, HCP, volunteers, or visitors during a 6 week period. A “baseline” for scabies is not a standard HCF measurement, and the occurrence of a single case is relatively uncommon, particularly in long-term care facilities. However, the [management of a single case](https://www.cdc.gov/parasites/scabies/health_professionals/single.html) is essentially the same as for an outbreak (see https://www.cdc.gov/parasites/scabies/health_professionals/single.html). An outbreak should be assumed to be occurring following diagnosis of a single case, until screening of all new patients and staff for scabies has been completed without identifying additional suspect cases. An outbreak cannot be conclusively excluded for at least 6 weeks following the last unprotected exposure to the case.

Confirm the Diagnosis

Usually, the first indication that a scabies outbreak is underway is complaints of itching and new onset of a rash by one or more patients/residents within a period of 5-12 days. Exposed HCP, volunteers, and frequent visitors may also complain of itching and rash at about the same time. To confirm an outbreak of scabies, skin scrapings (see Appendix A) should be performed on those who have symptoms of scabies infestation to obtain identifiable specimens (mites, fecal pellets, or eggs). Since patients/residents with typical scabies are generally infested with relatively few mites, obtaining specimens for scabies confirmation is difficult. Diagnosis can be especially difficult in elderly or immunosuppressed persons whose skin may be dry and scaly, with potential for pre-existing, chronic dermatological conditions. At least 4-6 skin scrapings at different sites on the body, where mites are typically found or where skin irritation is consistent with scabies infestation, should be performed by the IP or other HCP proficient with the procedure.

Although skin scrapings are generally negative in typical scabies, it is recommended that this procedure be performed on at least one symptomatic case. The absence of mites, eggs, or fecal pellets upon microscopic examination does not rule out scabies infestation. If skin scrapings are "negative" and all other symptoms point to a scabies infestation in more than one person, it may be necessary to proceed with the outbreak investigation and implement control measures based on symptoms rather than a verified diagnosis.

Persons suspected of having atypical or crusted scabies should have up to 6 skin scrapings performed on affected skin. Because of the large number of mites, the first scraping will usually produce mites, fecal pellets, and/or eggs (note that fecal pellets and eggs would be exceedingly difficult to obtain from a patient with typical scabies). Six negative scrapings in a patient/resident with suspected untreated atypical or crusted scabies should lead to reconsideration of the diagnosis.

If skin scrapings are negative but scabies is still suspected, a "burrow ink-test" may provide clues to aid in the diagnosis. This test requires a light source, magnifying lens, and a black or green felt tip pen. Ink from the pen is rubbed directly over any unexcoriated, intact serpentine, red line suspected as a possible mite burrow. The ink is immediately and gently wiped off with an alcohol-impregnated wipe. Subcutaneous ink appearing as a black or green zigzag line under magnification indicates presence of a burrow. This is an insensitive method of diagnosing scabies and may only be useful for a few days following the onset of signs and symptoms.

Identification of Contacts of Symptomatic Case(s)

As soon as a possible case of scabies is identified, the IP should develop a contact identification list. This list should identify every patient/resident, HCP, volunteer, and visitor who may have had direct, physical contact with the case within the previous 6 weeks. If more than one symptomatic case is identified, a separate contact list for each case may be required. Initially, the contact identification list should be limited to the nursing unit where the suspect or confirmed case resides. This list should contain the following: (see Appendix B1-B4 for fillable data forms)

1. Include the nursing unit, room number, name, date of onset of symptoms, results of skin scrapings, date of initial treatment, date of follow-up treatment, results of treatments (e.g. condition resolved or not resolved), and the date and results of

- repeat skin scrapings, if performed.
2. Identify roommates of the case. Include roommates who have been discharged, moved to other nursing units, or to another HCF within the previous 6 weeks.
 3. Determine the daily routines of the case for the previous 6 weeks and identify exposed patients/residents located on the same unit or on other nursing units.
 4. Determine if the case was transferred to another HCF for treatment, such as dialysis, within the past 6 weeks. Notify the other facility's IP.
 5. Notify visitors (spouse, family members, or friends) who may have visited the case within the past 6 weeks.
 6. Identify HCP and volunteers who have had direct physical contact with the case within the past 6 weeks. Determine if these contacts are symptomatic or asymptomatic.
 7. Determine if household contacts or the sexual partner of a symptomatic HCP, volunteer, or visitor has signs or symptoms of scabies infestation.
 8. Determine if there are symptomatic HCP, patients/residents, volunteers, or visitors on other nursing units. If an initial evaluation indicates no unusual complaints of pruritus or changes in the condition of the skin, treatment may not be indicated. However, a follow-up evaluation should be done at least every other day for 4 weeks.

After developing a contact identification list, the IP should determine who should receive treatment and the treatment schedules to be followed. Contacts determined to be symptomatic should be treated as soon as possible, preferably within 24-48 hours. The identification of two or more symptomatic HCP assigned to the same unit suggests that prophylaxis is indicated for all unit/area contacts, whether or not they were direct contacts of a known scabies case. Note that contact tracing for scabies cases can be extremely personnel resource intensive, and even more so if multiple cases have been identified and/or cases have moved throughout a HCF. Failure to identify contacts may result in the occurrence of secondary cases; contact tracing will then become even more difficult. Therefore, it is critical that HCF administration take steps to ensure that adequate personnel resources are allocated as soon as a case is identified. Having an outbreak management plan with prior identification of responsible personnel and early activation of the plan is strongly recommended.

ACTIVATION OF THE SCABIES OUTBREAK MANAGEMENT PLAN

Notification of Key Personnel

Members of the infection control committee and HCF administration should be notified when activation of the scabies outbreak management plan is judged to be necessary by the IP. An emergency meeting should be scheduled to discuss strategies for implementing the plan. The meeting should include representatives from all departments including infection control, environmental services, and laundry.

Staffing the Infection Control Department

Implementing a HCF scabies outbreak management plan is labor intensive. Professional and support staff should be diverted as necessary to assist the IP.

Notification of Healthcare Personnel and Volunteers

All HCP and volunteers should be notified as soon as possible. Initially, a communication memo should be distributed to all departments (see example memorandum in Appendix C1). The memo should briefly describe what is known of the outbreak, the signs and symptoms of scabies infestation, and whom to contact immediately if infestation is suspected. It should be stressed that only HCP and volunteers who currently have signs or symptoms consistent with scabies infestation should identify themselves. HCP and volunteers who are not currently symptomatic should be informed of how, when and where to obtain prophylactic treatment as soon as those arrangements are made. A fact sheet with information on scabies in lay language should be distributed with the memo (see Appendix D as an example).

Continued communication with all HCP and volunteers is very important. It may be necessary to update all departments daily or at appropriate intervals. Key management personnel should be briefed daily on the progress of the outbreak. These key people should maintain high visibility until the outbreak is terminated. A telephone hotline or a computerized message may assist in maintaining the lines of communication.

Notification of Physicians

All physicians on staff should be notified of the scabies outbreak (see example memorandum in Appendix C2). Request physicians to assess their patients/residents for clinical signs and symptoms of scabies infestation as soon as possible and to notify the nursing unit manager of any suspect or confirmed cases. If a patient/resident has clinical signs or symptoms consistent with infestation, the physician should perform a skin scraping. If the physician is not familiar with this procedure, a staff dermatologist or other trained professional should be called to assist. The IP should be consulted for recommended treatment options. Physicians should also be alerted that, over the next 2-6 weeks, previously hospitalized patients/residents might report symptoms suggestive of scabies infestation because of their possible exposure during hospitalization. These cases should be reported to the infection control department and treated with an effective scabicide.

Notification of Current Patients/Residents and Visitors

All current patients/residents and visitors should be notified as soon as possible that a scabies outbreak has been identified. This communication can be accomplished with a letter (see Appendix C3) distributed on a dietary tray, together with a fact sheet on scabies in lay language (Appendix D). The letter should briefly describe the outbreak, the symptoms, a brief description of the treatment, if any, which the patient/resident may expect, and whom to call if there are questions. Additionally, patients/residents should be notified at the time of discharge to report any symptoms of infestation to their attending physician.

Searching for Source or Index Case

The source or index case may be a HCP, volunteer, visitor, current patient/resident, a discharged patient/resident, or a frequent clinic, dialysis or an emergency room patient. Searching for the index case or cases may consume a great deal of time and, in the end, the true source case may not be identified. However, the effort is worthwhile since an

unidentified case may continue to be a source, thereby continuing the outbreak in spite of prophylaxis. Because investigations of these outbreaks are difficult, all healthcare professionals associated with the HCF should do their part. A sample memorandum has been drafted to assist in coordinating the search for the source or index case (see Appendix C4).

Protective Equipment and Pharmacy Supplies

Provisions should be made for obtaining personal protective equipment such as disposable long sleeve gowns and gloves if not already available. The pharmacy should make arrangements for obtaining permethrin (Elimite™, Acticin) 5% cream. If ivermectin (Mectizan®, Stromectol®) is recommended as a scabies treatment option, the pharmaceutical company should be notified and arrangements made for overnight shipping if necessary.

CONTROLLING THE OUTBREAK (4-11)

Control of a scabies outbreak involves a choice between treating only symptomatic cases and their known contacts or **facility-wide (mass) prophylaxis** of all possible contacts including asymptomatic patients/residents, HCP, volunteers, and visitors. Treatment of only symptomatic cases and their identified contacts may result in silent, continuous transmission over a sustained period of time due to the delay in onset of symptoms and delay in diagnosis and treatment. Failure to identify and treat even one contact can result in continued propagation of the outbreak. As a result, repeated prophylaxis of asymptomatic HCP and volunteers may be required, which can affect compliance with treatment. An outbreak that has likely been ongoing for a month or more is rarely controlled treating only symptomatic cases and their known contacts. While considerable resources may be needed to accomplish mass prophylaxis, this can be accomplished in a few days, compared to the continued expenditure of resources required for contact tracing and treatment over many weeks. Consultation with your local public health department is strongly recommended when confronted with these decisions.

Analysis of the surveillance data collected on persons diagnosed may assist the infection control committee in making the decision about what prophylactic treatment is most appropriate. If the identified source patient/resident was diagnosed with atypical or crusted scabies, has been hospitalized for many days or weeks, and has been transferred between several nursing units and diagnostic services, mass prophylaxis may be necessary. Limited mass prophylaxis (i.e. persons associated with a specific area) should only be done if there is strong epidemiological evidence that the outbreak is confined to a specific unit or department. However, because HCP and ancillary staff typically float from service to service and from nursing unit to nursing unit, treatment limited according to location may not terminate the outbreak.

Isolation of Patients/Residents

Most HCF follow the [contact isolation precautions for scabies patients/residents described by the CDC](https://www.cdc.gov/parasites/scabies/health_professionals/institutions.html) (https://www.cdc.gov/parasites/scabies/health_professionals/institutions.html). Isolation of asymptomatic patients who are being treated prophylactically is not necessary. Only patients/residents who have symptoms consistent with scabies infestation or who have positive skin scrapings need to be placed in isolation. Patients/residents with atypical or crusted scabies should be isolated until skin scrapings are negative or the signs and

symptoms of infestation have abated; these persons generally require treatment at least twice, one week apart. A team of HCP should be assigned to care only for patients/residents with atypical or crusted scabies during the isolation period.

Treatment Schedules

A treatment schedule should be defined once it has been determined whether limited or facility wide mass treatment is necessary. To prevent silent transmission of scabies, all those included in the treatment schedule should be treated in the same 24-hour treatment period. If nursing units or departments are to be treated in succession, it is best to limit rotating staff until all units have completed the treatment.

If possible, all patients/residents should receive their initial treatment on the first or day shift. HCP who work the first shift can apply the scabicide to themselves and household contacts after they complete the first shift. HCP working the second or third shift should apply the scabicide before coming to work. Their household contacts should apply the scabicide before going to bed. All HCP should wear gloves and long sleeve gowns for all patient/resident contacts during the 24-hour treatment period. Gloves should be removed after each patient/resident contact. Long-sleeve gowns only need to be removed when exiting an isolation room or if the gown becomes soiled with blood or other body fluids. Frequent reapplication of the scabicide to the hands and wrists will be necessary after gloves are removed and hands are washed. HCP on the first shift should shower in the morning before coming to work. Patients/residents who were treated on the previous day can be bathed or showered on the morning of the day following the treatment period. HCP who work the evening or night shift should also shower just prior to reporting for work.

Controlling Transmission (Typical and Atypical Scabies)

Typical Scabies

The following precautions should assist in the development of an effective plan to control further transmission.

1. Place symptomatic patient(s)/resident(s) on isolation precautions in their assigned rooms. Restrict patient(s)/resident(s) to their room(s) for the duration of the first treatment period (8-12 hours). Following bathing to remove the first application of scabicide, discontinue isolation precautions. Isolation precautions are not necessary for prophylactic treatments (e.g., follow-up treatments or treatment of asymptomatic contacts).
2. Wear cloth or disposable long sleeve gowns when applying the scabicide and for all direct patient/resident contacts during the defined treatment period. Gowns may be reused by the same HCP during an entire shift and then discarded.
3. Wear gloves when applying the scabicide and for all direct patient/resident contacts during the defined treatment period. The cuff of the glove should cover the wrist of the gown. Gloves should be discarded immediately following the completion of any task involving skin contact during the defined treatment period.
4. Instruct visitors to wear a long sleeve gown and gloves until after the scabicide has been washed off.
5. Wash hands, wrists, and lower arms following removal of gowns and gloves.

6. Bathe or shower the patient(s)/resident(s) prior to applying scabicide if the patient/resident has not been bathed within the previous 24 hours. Wash hair and clip and clean patient's/resident's finger and toe nails.
7. Apply the scabicide from the hairline and ears to the soles of the feet. Use a soft brush, such as a toothbrush, and apply scabicide under the finger and toenails. Reapply the scabicide immediately after hand washing or cleansing of the perineal-rectal area if incontinence occurs, and other areas of the body which have become moist. If the patient/resident perspires heavily, the scabicide may have to be reapplied to the back, buttocks, and the backs of the legs several times during the treatment period.
8. Place all washable personal clothes worn by the patient/resident during the preceding week into a plastic bag, seal, and send home with family members to wash and dry. Instruct family members to wash clothes in hot water and laundry detergent and to dry in a hot dryer.
9. Place all non-washable personal clothes such as shoes, coats, jackets, and scarves worn by the patient/resident during the preceding week in a plastic bag. Instruct family members to have items dry cleaned or place them into a hot dryer for 20 minutes. If this is not possible, seal the plastic bag for 5-7 days.
10. Change all bed linens including blankets and spreads following the initial application of scabicide. Remove all used towels, wash cloths, and bed clothes worn by the patient/resident. Place these items in a plastic bag and send to the laundry for processing.
11. Instruct laundry personnel not to sort personal clothes, sheets, towels, or bedspreads and to wash and dry these items separate from other facility laundry.
12. Change bed linens, towels, and clothing after the scabicide has been washed off.
13. Disinfect mattress, pillow covers, bedside equipment, and floors after scabicide has been washed off.
14. Disinfect multiple use equipment such as walking belts and blood pressure cuffs.
15. Discard any topical creams, ointments, or lotions used by symptomatic cases.

Atypical or Crusted Scabies

The following precautions should assist in the development of an effective plan to control further transmission.

1. Place symptomatic patient/resident on contact isolation precautions in a private room until at least 2-3 negative skin scrapings have been documented. This may take from 7-30 days or longer, depending on the severity of the infestation.
2. Place symptomatic contacts on isolation precautions in their assigned rooms. Restrict contact(s) to their room for the duration of the treatment period (8-12 hours - symptomatic contacts should be considered to have typical scabies). Following bathing to remove the scabicide, precautions can be discontinued. Isolation precautions are not necessary for prophylactic treatments (e.g., follow-up treatments or treatment of asymptomatic contacts).

3. Wear cloth or disposable long sleeve gowns when applying the scabicide and for all direct patient/resident contacts while patient/resident is in isolation. Gowns may be reused by the same HCP during an entire shift and then discarded.
4. Wear gloves when applying the scabicide and for all direct patient/resident contacts until post-treatment skin scrapings are negative. The cuff of the glove should cover the wrist of the gown. Gloves should be discarded immediately following the completion of any task involving skin contact during the treatment period.
5. Remove upholstered furniture from the room and cover with plastic for 7-10 days.
6. Follow the infection control precautions delineated for typical scabies listed in numbers 4 through 15, above.
7. Perform skin scrapings when the condition of the skin is noticeably improved, e.g., the crusted lesions have begun to resolve and signs and symptoms associated with scabies have improved.

Alternative Treatments for Atypical or Crusted Scabies (See Appendix E)

Treatment Options for Symptomatic Cases (4, 5)

Permethrin (Elimite™, Acticin) 5% Cream

The current recommended treatment for scabies is 5% permethrin cream, a synthetic pyrethroid. When applied to the skin as directed, it is approximately 90% effective after one application. Two applications may be required in cases of atypical or crusted scabies and is often recommended to assure complete eradication of mites. The cream has a low rate of reported side effects, which consist of burning, stinging, or itching immediately following application.

Animal studies have shown no adverse effects to reproductive function or to the fetus. However, studies have not been done on pregnant women. Therefore, permethrin should be used during pregnancy only if there is a clear indication for treatment. Breast-feeding should be discontinued during the treatment period. Permethrin is safe for children 2 months of age or older.

Crotamiton lotion/cream (Eurax, Crotan™) 10%

Crotamiton lotion is not approved by the U.S. Food and Drug Administration for use on children. It is considered safe when used as directed, however, allergic and irritant dermatitis may occur in some persons. The product should not be used on acutely inflamed or open skin lesions.

Ivermectin (Mectizan®, Stromectol®)

Oral ivermectin, though not approved by the FDA for use in the treatment of scabies, should be considered for patients/residents who have failed treatment or cannot tolerate topical scabicides. Two doses 200 ug/kg/dose, given one week apart, has been shown to effectively treat classic scabies. Medication should be taken with food.

Most research shows very little difference in efficacy between the available treatments for scabies. Single administrations of permethrin 5%, crotamiton 10%, and systemic

ivermectin are all comparably effective. Treatment should be based upon the frequency and ease of application. For additional treatment options, please view the [CDC webpage for medications for the treatment of scabies](https://www.cdc.gov/parasites/scabies/health_professionals/meds.html) (https://www.cdc.gov/parasites/scabies/health_professionals/meds.html).

Treatment of Asymptomatic Patient/Residents, Healthcare Personnel, Volunteers, and Visitors

Asymptomatic patients/residents, HCP, volunteers, and visitors and their contacts should be treated during the same treatment period as those who are symptomatic. HCP should be allowed to return to work following a single application (8-12 hours) of permethrin. Follow-up treatments are not necessary unless re-exposure occurs or symptoms persist. The following information may be useful in determining who needs to be treated:

1. Contact with a symptomatic case has not been substantiated: no treatment is required. However, approval of 1 application of scabicide should be granted if requested.
2. Contact with a symptomatic case is minimal such as delivering dietary trays or newspapers and books: no treatment is required. However, approval of 1 application of scabicide should be granted if requested.
3. Contact with a symptomatic case is substantial such as bed making, physical assessment, or turning patient/resident: asymptomatic and symptomatic persons should be treated with 1 application of permethrin. Family members, roommates, and sexual partners of symptomatic cases should also be treated at the same time. Retreatment may be necessary if symptoms persist following the first treatment.

Symptomatic HCP, volunteers, and visitors should follow the instructions for washing clothes and decontaminating the home environment outlined in the prevention of transmission section of this guideline.

Post Treatment Assessment

If treatment with permethrin has been effective, the intensity of pruritus and rash should gradually resolve over a 7-14 day period. Itching may continue or even increase for several days or weeks. This may not be the result of treatment failure, but due to the release of antigens from dying mites and an increase in allergic response.

Dermatologists recommend applying 1% hydrocortisone cream or triamcinolone cream (0.1%- 0.025%) to the most intense areas of pruritus and a lubricating agent or emollient to the areas of the skin less affected. Steroid creams, however, should not be applied until after the scabicide has been removed. Antihistamines may also be effective in relieving some of the symptoms.

If signs and symptoms persist or intensify or if new lesions are identified within 7-14 days, treatment failure should be considered. There are a number of reasons for treatment failures and the continued propagation of new cases in HCFs. The most common reasons are:

1. Poor application technique. To be effective, scabicides must be applied to every square inch of the skin from hair and ear line to the palms of the hands and soles

- of the feet (finger and toenails).
2. Continued contact with untreated or unsuccessfully treated patients/residents, HCP, or volunteer.
 3. Reluctance of HCP to disclose symptoms suggestive of scabies for fear of uncompensated time off.
 4. Failure of patients/residents who have immunosuppressive diseases such as HIV to respond appropriately to the scabicide.
 5. Continued use of topical steroids during the treatment period(s).
 6. Failure to kill the scabies mite in clothing, upholstered furniture, or carpeting.

REPORTING OUTBREAKS

Outbreaks should be reported to the local health officer and to the [California Department of Public Health, Licensing and Certification District Office](https://www.cdph.ca.gov/Programs/CHCQ/LCP/Pages/DistrictOffices.aspx) (<https://www.cdph.ca.gov/Programs/CHCQ/LCP/Pages/DistrictOffices.aspx>). Two or more confirmed cases or 1 confirmed case and at least 2 suspect cases occurring among patients/residents, HCP, visitors, or volunteers during a 6-week period should be considered an outbreak for reporting purpose.

SUMMARY

The diagnosis of a single case of scabies in a HCF can be expensive, frustrating, and results in a substantial amount of fear and anxiety for everyone involved. HCP must maintain a high degree of suspicion and take immediate action when signs and symptoms suggestive of infestation are observed. The first and most important step in preventing an outbreak is educating HCP to perform a frequent and thorough skin assessment on all patients/residents. Skin assessments should be documented and any findings suggestive of infestations should be communicated to the IP. Once a suspect case is identified, appropriate diagnostic procedures should be performed. Controlling the transmission of scabies once a case has been identified requires immediate action. Contacts must be identified, isolation precautions must be implemented, and a determination of who should be treated must be made. During the post-treatment period, patients/residents, HCP, volunteers, and visitors must be observed for possible treatment failure or reinfestation.

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REFERENCES

1. Chandler DJ and Fuller LC. A review of scabies: an infestation more than skin deep. *Dermatol* 2019;235:79-90.
2. Arlian LG and Morgan MS. A review of *Sarcoptes scabiei*: past, present, and future. *Parasit Vectors* 2017;10:297.
3. McCarthy JS, Kemp DJ, Walton SF, and Currie BJ. Scabies: more than just an irritation. *Postgrad Med J* 2004;80:382-387.
4. Ong CY and Vasanwala FF. Infected with scabies again? Focus in management in long-term care facilities. *Dis* 2019;7:3.
5. Hewitt KA, Nalabanda A, and Cassell JA. Scabies outbreaks in resident care homes: factors associated with late recognition, burden, and impact. A mixed methods study in England. *Epidemiol Infect* 2015;143:1542-1551.
6. Mounsey KE, Murray HC, King M, and Oprescu F. Retrospective analysis of institutional scabies outbreaks from 1984 to 2013: lessons learned and moving forward. *Epidemiol Infect* 2016;144:2462-2471.
7. Campbell JJ, Paulson CP, and Nashelsky J. What is the most effective treatment for scabies? *J Fam Pract* 2017; 66:E11-E12.
8. Dressler C, Rosumeck S, Sunderkötter C, Werner RN, and Nast A. The treatment of scabies: a systematic review of randomized controlled trials. *Dtsch Arzteblt Int* 2016;113:757-762.
9. Thadanipon K, Anothaisintawee T, Rattanasiri S, Thakkinstian A, and Attia J. Efficacy and safety of antiscabietic agents: a systematic review and network meta-analysis of randomized controlled trials. *J Am Acad Dermatol* 2019;80:1435-1444.
10. Rosumeck S, Nast A, Dressler C. Evaluation of ivermectin vs permethrin for treating scabies – summary of a Cochrane review. *J Am Acad Dermatol* 2019;155:730-732.
11. Chiu S and Argaez C. Ivermectin for parasitic skin infections of scabies: a review of comparative clinical effectiveness, cost-effectiveness, and guidelines. Ottawa: CADTH, 2019 May.

APPENDIX A – PROCEDURE FOR SKIN SCRAPING

Skin scrapings should always be performed by a clinician who is trained to perform the procedure. Nurse practitioners and physician's assistants can also perform the procedure if they have been trained by a clinician.

1. Obtain the following equipment:

- Gloves and Gowns
- Glass slides and cover slips
- Magnifying lens and light source such as goose neck lamp Alcohol impregnated wipes
- Felt tip pen (green or blue washable ink) Clear nail polish
- Mineral/immersion oil and dropper Potassium hydroxide
- Applicator sticks
- Disposable hypodermic needles (18-20 gauge x 1.5-2.0 inches) Surgical blade handle and # 15 surgical blade
- Sharps container
- Compound microscope (if available)
- Laboratory requisition form

2. Procedure:

- A. Observe patient's/resident's skin with a magnifying lens and look for lesions suggestive of scabies infestation. The shoulders, back, abdomen, hands, wrists, elbows, buttocks, axillae, knees, thighs, and breasts are common sites for burrows.
- B. Using a hand held magnifying lens and a strong light, look for new burrows or papules. If the burrow or papule is very fresh, a tiny speck (mite) may be visualized at either end of the burrow or in the papule. The mite will not be found in excoriated, scabbed or infected skin lesions. Preserved, unscratched papules may sometimes be found in a grouping of scratched papules.
- C. Visualize burrows using the "burrow ink test" described in the text.
- D. Select an unexcoriated burrow or papule.
- E. Prepare slides by dipping an applicator stick into mineral or immersion oil and transferring 2-3 drops to the center of several clean slides.
- F. Dip a hypodermic needle into the mineral oil and transfer a drop of oil to the lesion selected for scraping and spread the oil evenly over the intended scraping site.
- G. Hold the skin taut with one hand and hold the hypodermic needle at about a 5-10 degree angle with the other hand. If a surgical blade is used, hold blade at a 90 degree angle.

- H. Apply light pressure and scrape the lesion until the stratum corneum is removed. Increase the pressure slightly while scraping. A small amount of blood may be visible, however, there should be no frank bleeding. Used blades or needles must be placed in a sharps container.
- I. Transfer skin scrapings to a single slide or to separate slides. Place a cover slip over the scrapings.
- J. Obtain at least 4-6 scrapings per resident.
- K. Examine the entire slide preparation under low power magnification (2.5 - 4x) and then at 25 – 50x magnification for evidence of mites, eggs or fecal pellets. If a compound microscope is not available at the facility, secure the cover slips with clear nail polish and transport slides to a clinical laboratory, physician's office, or local public health laboratory.
- L. If more than one patient/resident has signs or symptoms of infestation, repeat the procedure using clean equipment on at least one other symptomatic patient/resident. If HCP are symptomatic, skin scrapings should be performed on at least 1 symptomatic HCP.

APPENDIX B1 – INDEX CASE HISTORY AND CONTACT IDENTIFICATION

Unit	Room #	Patient/Resident Name	Date of Symptoms Onset	Results of Skin Scraping (+, -, not done)	Date 1st Treatment	Symptoms Resolved (Y/N; Date)	Date of 2nd Treatment	Symptoms Resolved (Y/N; Date)	Results of follow up Skin Scraping (+, -, not done)

Comments: Patient/Resident has Typical; Atypical (Crusted) Scabies
 Recommended treatment: 5% Permethrin (Elimite); Alternative (identify below)

CONTACT IDENTIFICATION -- SYMPTOMATIC PATIENTS/RESIDENTS

Unit	Room #	Name	Date of Symptoms Onset	Results of Skin Scraping (+, -, not done)	Date of Treatment	Date of 2nd Treatment	Symptoms Resolved (Y/N; Date)	Comments

APPENDIX B2 – INDEX CASE HISTORY AND CONTACT IDENTIFICATION

Unit	Room #	Patient/Resident Name	Date of Symptoms Onset	Results of skin scraping (+, -, not done)	Date 1st treatment	Symptoms Resolved (Y/N; Date)	Date 2nd treatment	Symptoms Resolved (Y/N; Date)	Results of follow up skin scraping (+, -, not done)
			See Appendix B1						

Comments:

CONTACT IDENTIFICATION -- ASYMPTOMATIC PATIENTS/RESIDENTS

Unit	Room #	Name	Results of Skin Scraping (+, -, not done)	Date of 1st Treatment	Date of 2nd Treatment	Symptoms Resolved (Y/N; Date)	Comments

APPENDIX B3 – SYMPTOMATIC CONTACT IDENTIFICATION LIST

Healthcare Personnel, Volunteers, Visitors

PATIENT/RESIDENT CONTACT: (Name) _____

Symptomatic Contact Name	HCP	VOL	VIS	Date of Symptoms Onset	Results of Skin Scraping (+, -, not done)	Date of Treatment	Symptoms Resolved (Y/N; Date)	Date Family Treated	Comments

APPENDIX B4 – ASYMPTOMATIC CONTACT IDENTIFICATION LIST

Healthcare Personnel, Volunteers, Visitors

PATIENT/RESIDENT CONTACT:(Name) _____

Asymptomatic Contact Name	HCP	VOL	VIS	Treatment Recommended (Y/N)	Date of Treatment	Comments

APPENDIX C1

SAMPLE MEMORANDUM TO STAFF MEMBERS

Date:

To: All Employees

From: Name, Title

Subject: Scabies Outbreak

The infection control department is currently investigating an outbreak of scabies among our employees. To date 3 healthcare personnel and 1 physical therapy aide have reported symptoms of scabies infestation confirmed by skin scrapings by the employee health service. These employees have been symptomatic for the past 2 weeks and perhaps longer. To date the index or source patient/resident (or visitor) has not been identified. The incubation period for scabies is generally 2-6 weeks following exposure. The incubation period may be as short as 1-4 days if the exposed person has previously been infested with scabies. Therefore patients/residents, staff, and volunteers may be incubating scabies without symptoms and can transmit the infestation to other patients/residents, healthcare personnel, or volunteers.

Your Assistance and Cooperation are Urgently Needed

1. First, don't be alarmed. Administration and the Infection Preventionist are doing everything possible, as soon as possible, to control the outbreak. We will communicate all necessary information and instructions to each department manager and employee as decisions are made for the implementation of a prophylactic treatment program of limited or wide scope. It may take several days to order and procure the necessary medications and supplies.
2. If you currently have symptoms of scabies infestation, please call your healthcare provider (or the employee health service at -----) and schedule an appointment to be evaluated as soon as possible, preferably today or no later than tomorrow. (The employee health service has extended the hours of operation from -----AM to ----- PM for the next 3 days for your convenience.)
3. The recommended treatment for nearly all scabies infestations is permethrin (Elimite™, Acticin) 5% cream. Please follow the instructions given to you by your physician (or the employee health department) when applying the cream.
4. If you have been diagnosed with a scabies infestation (positive skin scraping or a rash that is highly suspicious), it is likely that your spouse or sexual partner as well as all other household members are also incubating scabies and may already be symptomatic. If you **currently** have symptoms of scabies, your physician (or the employee health department) may also supply you with enough permethrin 5% cream to treat all your household contacts. Please follow the directions for application for all your household contacts.

5. If you are currently symptomatic and your schedule does not coincide with your physician's (or the employee health department) office hours, you can report to the emergency room for evaluation. If you report to the emergency room you may not be seen immediately, depending on the patients there and their problems.
6. The general symptoms of scabies infestation in healthy persons are as follows:
 - Skin lesions may resemble a rash on the hands, webs of fingers, wrists, elbows, armpit, knees, trunk, beltline, genital area or other generally loose areas of skin.
 - The lesions may appear as red, raised bumps (papules), pustules, or burrows (short, straight or serpentine, raised lines that are pinkish to red in color) on the skin that are best observed with a magnifying lens.
 - Pruritus is generally intense especially at night.

Scabies is not likely to be transmitted from patient-to-patient except on nursing units such as the skilled nursing facility, psychiatric, or rehabilitation units. Because activities and socialization are encouraged on these units there is an increased risk for transmission in these units.

APPENDIX C2 SAMPLE MEMORANDUM TO STAFF PHYSICIANS

Date:

To: All Staff Physicians

From: Name, Title

Subject: Scabies Outbreak

Our medical center is currently investigating an outbreak of scabies among our healthcare personnel. To date 3 healthcare personnel and 1 physical therapy aide have reported symptoms of scabies infestation confirmed by skin scrapings by their physician (or employee health service). These employees have been symptomatic at least the past 2 weeks and perhaps longer. To date the index or source patient (or person) has not been identified.

Your Assistance and Cooperation are Urgently Needed

Any physician who has developed any type of unexplained rash should report to their healthcare provider (or the employee health service) for evaluation. If you think you may have scabies and are treating yourself, please notify either the Infection Preventionist (or the employee health service).

We believe that the source or index case for this scabies outbreak is an undiagnosed patient/resident. This patient/resident may have been discharged; alternatively, there is a possibility that this patient/resident may be residing on one of our nursing care units such as the skilled nursing facility, psychiatric unit, rehabilitation unit, or the chronic ventilator unit.

A memo has been sent to all nursing managers instructing them to have a nurse perform a thorough assessment of the skin of all patients/residents before 8 AM tomorrow morning. The nursing unit managers have been instructed to flag the medical charts of those patients/residents with a rash for further assessment by their attending physicians.

If, after your assessment you think the patient/resident has scabies:

- Notify the patient's/resident's primary care nurse or team leader.
- Write an order for contact isolation precautions.

Do not order treatment until you receive instructions from Dr.____, the Infection Preventionist. These instructions will be sent to you within the next 2 days.

Schedules for implementing the treatment program are being developed. However it may take several days to order and procure the necessary medications and supplies to treat several hundred of our employees and patients/residents. Additionally we would like to treat all healthcare personnel and patients/residents during the same 24-hour treatment period. All healthcare personnel requests for treatment of scabies should be referred to the employee health service.

Scabies

The incubation period for scabies is generally 2-6 weeks. The incubation period may be as short as 1-4 days if the exposed person has previously been infested with scabies. Therefore, patients/residents, staff, and volunteers who may have been exposed may be incubating scabies without symptoms and can transmit the infestation to other patients/residents, healthcare personnel, or volunteers.

The symptoms of scabies infestation in healthy persons are:

- Skin lesions on the hands, webs of fingers, wrists, elbows, knees, trunk, beltline, genital area, or other areas of skin
- The lesions may appear as red, raised bumps (papules), pustules, or burrows (short, straight or serpentine, raised lines that are pinkish to red in color) on the skin that are best observed with a magnifying lens.
- As the infestation progresses over a period of several weeks to months the rash may mimic other dermatological conditions such as eczema, impetigo, or drug reaction.
- Pruritus is generally intense, especially at night.

In elderly patients/residents and those who are immunosuppressed because of prolonged illness, insulin-dependent diabetes, renal failure, or advanced cardiac disease, the symptoms of scabies infestation may differ substantially from those symptoms in normally healthy persons such as most of our healthcare personnel.

- A rash that may be difficult to see and may be non-specific.
- Pruritus may or may not be present. Also, pruritus of a chronic nature may be present, especially in those who are bedridden or who are confined to a wheelchair with blankets to keep them warm or are patients/residents who wear multiple layers of clothes.
- The rash tends to occur where the skin is especially warm and moist. Therefore, the rash, papules, vesicles or other lesions may be more prominent on the back, sacrum, buttocks, backs of legs, in the finger webs, and under the breasts.
- Atypical or crusted scabies, an advanced form of scabies, presents with scaling, crusted lesions. The lesions often appear on the hands, feet, fingernails and toenails and resemble crusted, thickened lesions that are similar to the calluses on the hands of a person who has worked in heavy construction for many years.
- In severely immunosuppressed patients such as those who have received steroids, the rash may only be slightly reddish, very fine and confluent and may cover most of or the entire skin surface.

Thank you for your assistance.

Name, Title

APPENDIX C3 SAMPLE LETTER TO PATIENTS/RESIDENTS

Facility Letterhead

Date

Dear Patient/Resident,

We have recently identified a scabies outbreak in our healthcare facility and wanted to inform you of a possible exposure. Though it is unlikely you will become infested with scabies, we are working in collaboration with (County Name) Public Health Department to ensure appropriate actions are taken, if you do exhibit symptoms.

A scabies infestation, caused by the “human itch mite”, is spread through direct skin-to-skin contact. Red, raised bumps or an itchy rash on the skin, usually between the fingers or on the wrist, elbow, armpit, genital areas, waist, and shoulder blades, are the most common symptoms reported. It takes approximately four to six weeks for symptoms to appear and an individual may be infectious to others, even if symptoms are not apparent. Scabies is treated using a medicated lotion or oral medication prescribed by your physician.

If you begin to exhibit symptoms, such as a rash and/or itching within the next four to six weeks, please contact your personal physician. If you have any questions, please call me at _____ . Thank you.

Sincerely,

Name, Title

APPENDIX C4 SAMPLE MEMORANDUM TO MANAGERS

Date:

To: All Department Supervisory Personnel

From: Name, Title

Subject: Scabies Outbreak

We need your assistance in identifying the source or index case of scabies.

We believe that the source or index case for this scabies outbreak is an undiagnosed patient/resident. This patient/resident may have been discharged, or alternately, may be residing on any of the nursing units including the extended care units such as the skilled nursing facility, psychiatric unit, rehabilitation unit, or chronic ventilator unit.

In elderly patients and those who are immunosuppressed because of prolonged illness, insulin-dependent diabetes, renal failure, or advanced cardiac disease, the symptoms of scabies infestation may differ substantially from those symptoms in normally healthy persons such as most of our healthcare personnel. These symptoms include:

- A rash that may be difficult to see and may be non-specific.
- Pruritus may or may not be present. Also, pruritus of a chronic nature may be present, especially in those who are bedridden or who are confined to a wheelchair with blankets to keep them warm or are patients who wear multiple layers of clothes.
- The rash tends to occur where the skin is especially warm and moist. Therefore, the rash, papules, vesicles, or other lesions may be more prominent on the back, sacrum, buttocks, backs of legs, in the finger webs, and under the breasts.
- Atypical or crusted scabies, an advanced form of scabies, presents with scaling, crusted lesions. The lesions often appear on the hands, feet, fingernails, and toenails and resemble crusted, thickened lesions that are similar to the calluses on the hands of a person who has worked in heavy construction for many years.
- In severely immunosuppressed patients/residents such as those who have received steroids, the rash may only be slightly reddish, very fine and confluent and may cover most of or the entire skin surface.

Nursing Unit Managers and Charge Nurses on All Shifts

To assist the Infection Preventionist, please comply with following instructions:

1. Instruct your staff nurses to **perform and document** in the progress notes a **thorough skin assessment of all patients/residents** currently located on your nursing unit. Additionally, all newly admitted patients/residents should have a skin assessment documented.
2. Using **tomorrow's daily census roster** that contains patients/residents names,

medical record numbers, current location, and admitting diagnoses please identify any patient with any type of a skin rash. If the rash carries a preliminary or confirmed diagnosis, please note that on the census roster beside the patient's/resident's name. **This information should be forwarded to the infection control office no later than noon tomorrow.**

3. If the patient/resident with a rash has **been transferred to your unit** from another nursing unit, please identify the unit or units and the date of the transfer.
4. Physicians should be notified of the rash and requested to evaluate their patients/residents on rounds tomorrow morning. Nursing unit managers should flag those charts of patients/residents with rashes as a reminder to the physician to perform a thorough skin assessment. **Physicians will receive a memorandum regarding the outbreak in their mailboxes this afternoon.** All patients/residents who are not evaluated by a physician on rounds tomorrow should be **evaluated by the medical director of that unit.**
5. At this time we do not feel that isolation is necessary for all patients/residents with undiagnosed rashes. However, if after nurses and/or physicians have performed a thorough skin assessment and the **rash is highly suspicious for scabies, it is appropriate to place this patient/resident in contact isolation precautions.**
6. If there is any healthcare personnel who knows of **any patient/resident who has been discharged and who had a rash consistent with scabies or was treated for scabies**, please add that name to the daily census roster to be submitted to me by noon tomorrow.

If you have questions, please call my office at ----- or cell phone -----.

Thank you for your assistance.

Name, Title

APPENDIX D SCABIES FACT SHEET

What is scabies? Scabies is a contagious skin condition (infestation, not infection). It is caused by a very tiny mite called the "human itch mite". These mites are about the size of a dot at the end of this sentence. They are grayish in color and nearly transparent.

The female scabies mite burrows or tunnels into the outer layer of skin in a thin, straight or serpentine, red line about a half-inch long and then lays eggs. Such a burrow is usually very hard to identify. The first location is usually in the webs between the fingers or toes, around the wrist, or the navel. It can also be found on the back of elbows, the folds of the armpits, the beltline and abdomen, about the creases of the groin, and on the genital organs. Small children, especially babies, often have involvement of the face, scalp, palms of the hands, or soles of the feet.

What are symptoms of scabies? The symptoms of a scabies infestation are an allergic reaction to the mites. There is usually an itching skin irritation and tiny reddened dots with surrounding redness or streaks of redness. Itching is usually worse at night. Persons who have never had scabies before usually notice symptoms about 2-6 weeks after their contact with someone with scabies. Persons who have had previous infestations of scabies develop symptoms sooner, often within 1-4 days.

How is scabies transmitted? The mite is generally transmitted from person-to-person by close body (skin) contact. Sharing clothing and bedding with infested persons can also spread the infestation. Shaking hands, holding, or clasping hands as in children's games can be a method of transfer. The mites do not survive more than 2-3 days off the body.

How is scabies diagnosed? A scabies infestation is diagnosed by looking at the rash with a magnifying lens. A doctor or nurse may also obtain small samples of scraped skin to look for the itch mite under a microscope.

How is scabies treated? Treatment usually consists of an application of a cream that must be prescribed by a doctor. **Always follow the directions provided with the medication.** It is put on the skin from the neck down, left on for about 12 hours (often overnight), and then washed off. After putting the cream on the skin you should put on clean clothes. The cream can be showered off the morning after the treatment. Itching may persist for 1-2 weeks after treatment. This does not mean treatment has failed but rather that reaction to the dead mite and its byproducts has continued for a while. Medication to reduce itching may be prescribed. Avoid scratching because the skin may become infected. Infection with bacteria of a scratched area may require treatment as well.

How can the spread of scabies be prevented? Person with symptoms should be checked and treated by their doctor as soon as possible. Persons living in the same house and having skin-to-skin contact with someone with scabies should be treated at the same time to prevent scabies before symptoms develop. If you wait until symptoms develop, mites may already be transferred to other persons. Wash bedding, clothing, towels, and other bath linen that are used within 3 days before treatment in a washer

using hot water and dry using the hot dryer cycle. Clothing and items that cannot be washed should be stored in a closed plastic bag for one week.

This fact sheet is not intended to be used as a substitute for appropriate professional advice.

APPENDIX E – ALTERNATIVE TREATMENT FOR ATYPICAL (CRUSTED) SCABIES

Patients/residents with atypical or crusted scabies often require several scabicides to completely kill all the mites. If substantial improvement is noted after 2 or 3 treatments with permethrin, the attending physician may elect to continue with this scabicide; otherwise, alternate treatment plans may be used.

Treatment Option A:

1. Bathe patient/resident in lukewarm water for 10 minutes and apply permethrin for 24 hours.
2. Bathe patient/resident in lukewarm water on days 2, 4 and 6, apply crotamiton on days 3 and 5 only.
3. Apply permethrin on days 7, 14, 21 and 28.
4. Bathe patient/resident 24 hours following each application of permethrin.
5. Observe and assess resident for improvement. If no improvement, repeat treatment option A or choose an alternative treatment plan.

Treatment Option B:

1. Bathe patient/resident in lukewarm water for 10 minutes and apply permethrin for 24 hours.
2. Reapply permethrin 12 hours following the first application and leave on for 24 hours.
3. Bathe patient/resident in lukewarm water to remove permethrin.
4. Apply crotamiton every day for 3 weeks. Bathe patient/resident every other day.
5. Observe and reassess resident for improvement during the 4th week. If no improvement, repeat treatment option B for an additional week or choose another option.

Treatment Option C:

1. Bathe patient/resident in lukewarm water for 10 minutes and apply permethrin.
2. Give ivermectin 200 ug/kg.
3. Reapply permethrin 12 hours following the first application and leave on for 12 hours.
4. Bathe patient/resident in lukewarm water to remove permethrin.
5. Observe and assess for improvement for at least 4 weeks. If no improvement, select another treatment option or consult with dermatologist.

For all optional treatment plans, at least 3 skin scrapings performed at least 1 week after the completion of the selected treatment should be negative before scabies is declared cured.