



Ohio CMP Reinvestment Program
Project Proposal – Stop That Mite! Scabies Education
Submitted to CMS on March 12, 2018

1. Purpose and Summary

The purpose of this proposed project is to educate administrators, staff, and residents' family members in nine Jefferson County nursing facilities regarding the diagnosis, treatment, control, and prevention of scabies.

According to the federal [Centers for Disease Control and Prevention \(CDC\)](http://www.cdc.gov), institutions such as nursing facilities are often sites of scabies outbreaks. As we age, our skin becomes thinner, loses elasticity and heals at a slower rate. These changes make older individuals especially prone to a number of skin conditions that would not otherwise be serious health issues. One of these conditions is scabies. Scabies is caused by an infestation of the upper layer of the skin by microscopic scabies mites. Female mites burrow into the skin where they deposit eggs, which can cause a characteristic rash composed of crooked, raised lines and pimple-like bumps or blisters. The most common sites for this rash are the webbing between the fingers, wrists, elbows, armpits, knees, external genitals, or buttocks. The rash is accompanied by intense nocturnal itching. This can be particularly dangerous for older individuals, as excessive scratching result in open wounds that increase the risk of bacterial infection. The characteristic rash and itching due to scabies can be absent in debilitated, immunocompromised older individuals, which can lead to misdiagnosis and delayed or inadequate treatment and continued transmission.

An infestation can become an outbreak due to close contact between nursing facility residents and healthcare workers, and the movement of residents into common areas of the facility. This can cause panic in a nursing facility environment. Infestation by human-colonizing insects or mites creates health care expenses, increases labor costs, and reduces staff productivity. Uninfected staff and residents alike may begin scratching as psychogenic itching occurs.

There are two types of scabies: non-crusted scabies and crusted, or Norwegian, scabies. Control measures for non-crusted scabies should consist of surveillance for early

detection of new outbreaks, proper handling of patients, avoiding skin-to-skin contact, proper handwashing, and proper use of infection control techniques. Crusted scabies, also called Norwegian Scabies, is highly transmissible, requiring rapid and aggressive detection, diagnosis, and infection control to prevent and contain rapid spread. Teamwork among a facility's staff is important during an outbreak, thereby reducing secondary bacterial infections. It is also important in preventing cellulitis, lymphangitis, acute glomerulonephritis, and anemia, all of which also may occur due to chronic itching and scratching.

Curriculum

Training will be available to administrators and all other staff at nine participating nursing facilities, and to residents' family members. The key topics of the curriculum are:

- Overview: nature of scabies
- Transmission
- Identification
- Prevention
- Treatment
- Roles of Facility, Staff, and Families
- Monitoring, Controlling, and Reporting

For each of the curriculum topics, geriatric-specific training will be provided by the [Jefferson County Department of Health](#) according to [CDC guidelines](#). The training will be delivered using two methods: an onsite interactive presentation at each participating nursing facility that will feature color handouts (please see Appendix A), and online modules that will be available for completion 24/7 by the nursing facility staff. The onsite presentations will be delivered by nurses from the Jefferson County Department of Health on a pro bono basis. Videos for the online modules will be produced by the [Jefferson County Vocational School](#) in collaboration with the Jefferson County Health Department. The onsite presentation and online modules will contain a pre-test and a post-test (please see Appendix B) to measure educational effectiveness, and to provide information for the improvement of future educational offerings. This project will include a certificate of completion that will be awarded by the Jefferson County Health Department to staff who successfully complete the training.

The Jefferson County Health Department will offer up to three onsite follow-up trainings during the project period to any participating facility that experiences an

outbreak in order to reinforce information from the initial onsite presentation and online modules.

Sustainability

After successful project implementation and conclusion of the CMP grant period, the Jefferson County Health Department will continue to provide this training to all nursing facilities in Jefferson County for purposes of ongoing education and reference, and will offer the training to other county health departments in Ohio.

Reporting

The Jefferson County Department of Health will provide quarterly progress reports to the Ohio Department of Medicaid during the project period, as well as a final report at the conclusion of the project that includes, but is not limited to, data analysis, overall project results, and lessons learned.

2. Expected Outcomes

This 12-month project is expected to result in a decrease in scabies outbreaks in participating Jefferson County nursing facilities. It also is expected to increase awareness and knowledge among participating nursing facility staff regarding the diagnosis, treatment, control, and prevention of scabies. If a scabies outbreak should occur in a participating facility, this project is expected to result in improved care for residents, a decrease in secondary infections, and improved control of the outbreak.

3. Results Measurement

This project proposes to:

- Reduce the incidence of scabies in nine Jefferson County nursing facilities. The Jefferson County Health Department will track the incidence of scabies outbreaks in participating facilities during the 12-month project period and compare it to the incidence of scabies outbreaks in those facilities in the immediately preceding 12-month period.
- Improve trainees' knowledge regarding the diagnosis, treatment, control, and prevention of scabies by at least 25% as evidenced by a comparison of the training pre-tests to the post-tests.
- Have 75% of staff in participating nursing facilities complete the training and receive a certificate of completion.

4. Benefit to Nursing Home Residents

This project is expected to benefit nursing facility residents by reducing the incidence of scabies in nursing facilities, and by equipping administrators and staff with the knowledge they need to provide effective, high-quality care to residents if a scabies outbreak should occur.

5. Non-Supplanting

This project will in no way supplant existing responsibilities of nursing facilities to meet existing Medicare and Medicaid requirements or other statutory and regulatory requirements.

6. Consumer and Other Stakeholder Involvement

Stakeholders include thousands of nursing facility residents in Jefferson County who are vulnerable to scabies infestations, their family members, and the nursing facility staff who care for them. Members of the wider community may also be considered stakeholders to some extent, as visitors may transmit an infestation between the community and a facility.

7. Funding

Budget Table

Category	Cost Detail	Total Cost
CURRICULUM PLANNING		
Registered Nurse	16 hours @ \$35 / hour	\$560
Physician Educator	8 hours @ \$94 / hour	\$752
Researcher	8 hours @ \$20 / hour	\$160
TOTAL CURRICULUM PLANNING		\$1,472
PRESENTATION DEVELOPMENT AND VIDEO PRODUCTION		
Onsite Presentation Development	28 hours @ \$30 / hour	\$840
Online Module Development	34 hours @ \$30 / hour	\$1,020
Video Production – Jefferson County Vocational School	6 hours @ \$250 / hour	\$1,500
TOTAL PRESENTATION DEVELOPMENT AND VIDEO PRODUCTION		\$3,350
PRINTING		
Color Handouts – For Onsite Presentation	250 @ \$1.10 / each	\$275
Certificates of Completion	400 @ \$0.20 / each	\$80
TOTAL PRINTING		\$355
FOLLOW-UP TRAINING		
Follow-up Training (If Needed)	16 hours @ \$35 / hour	\$560
TOTAL FOLLOW-UP TRAINING		\$560
TRAVEL		
For Onsite Presentation, and Follow-Up Training if Needed	415 miles @ \$0.545 / mile	\$226
TOTAL TRAVEL		\$226
REPORTING		
Quarterly Reports	4 hours @ \$35 / hour	\$140
Final Report	10 hours @ \$35 / hour	\$350
TOTAL REPORTING		\$490
TOTAL FUNDING REQUESTED		\$6,453

Onsite presentations at each participating nursing facility will be delivered on a pro bono basis by staff nurses from the Jefferson County Department of Health.

8. Involved Organizations

- Jefferson County Health Department
- Jefferson County Vocational School

9. Contact

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Stop That Mite!

(Introduction and Handshake Game)

Scabies is common around the world.



According to the CDC, institutions such as Nursing Homes and Extended Care Facilities are often sites of scabies outbreaks.

Scabies is an itchy skin condition caused by a microscopic mite. It is common all over the world and can affect anyone. As we age, our skin becomes thinner, loses elasticity and heals at a slower rate. These changes make older individuals especially prone to a number of skin conditions that would not be a serious issue. One of these conditions is scabies.

Scabies is caused by an infestation of the upper layer of the skin by microscopic mites. Female mites burrow into the skin where they deposit eggs, and this can cause a characteristic rash composed of crooked, raised lines and pimple like bumps or blisters. The most common sites for this rash are the webbing between the fingers, wrists, elbows, armpits, knees, external genitals, or buttocks. This rash is accompanied by intense nocturnal (night) itching. The scabies are active at night, and even though other rashes may itch more at night, this night time intensity is striking in scabies. This can be particularly dangerous for older individuals, as excessive scratching cause open wounds that increase their risk for bacterial infection. The characteristic itching and rash of scabies can be absent in debilitated, immunocompromised elderly persons, which can lead to misdiagnosis and delayed or inadequate treatment and continued transmission.

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APPENDIX A
Handout – Onsite Presentation

How Do I Get Them???

These mites are most commonly spread by prolonged skin-to-skin contact with an infested person or frequent interaction with close members of a household. One can also get scabies from contaminated items such as bedding, clothing, furniture, and carpets. For this reason scabies is often spread in institutional settings such as nursing homes and other long-term care facilities.

An infestation can become an outbreak due to close contact between residents and healthcare workers, and the movement of residents into common areas of the facility. This can cause panic in the nursing home environment. Infestation by human-colonizing insects or mites creates health care expenses, increases labor costs, and reduces staff productivity. Pretty soon, staff and residents alike begin scratching as psychogenic itching or acarophobia starts.



Acarophobia - an irrational fear of mites

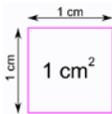
NOTES: _____

Do Scabies Mites Actually Burrow?

YES!! Unlike other mites, scabies mites actually burrow and produce tunnels, one centimeter or more in length just below the surface of the skin, in which they lay eggs. The mites are believed to feed on skin and secretions. The entire life cycle (10-17 days for human-infesting scabies mites) is spent on their host. Without a host, they survive only a few days. In previously unexposed individuals, a scabies infestation may go unnoticed for more than a month. If a person has never had scabies before, it may take a few weeks for symptoms to appear, but reinfection typically becomes symptomatic in a few days.

SCABIES FACTS

- One centimeter (cm) or more is the length of a typical scabies burrow.



- Mites pass through four stages of development: egg to larva to nymph to adult.
- A nymph is an immature form of an insect.
- Mite fecal matter is called *Scybala*.

NOTES: _____

APPENDIX A
Handout – Onsite Presentation



REVIEW

Symptoms of scabies are:

- * Characteristic rash composed of crooked, raised lines and pimple-like bumps or blisters
- * Intense itching, especially at night
- * Sores caused by scratching

The most common sites for scabies are the webbing between the fingers, wrists, elbows, armpits, under breasts, knees, back, external genitals or buttocks.

ID the Culprit

Generally, the diagnosis is made based on patient history and the appearance of the lesions, although this is not always straightforward. History of known exposure may be helpful in raising suspicion of this condition.

Take a dark washable wide-tip marker, and rub around the suspicious bumps or burrows. Then take an alcohol wipe and wipe away the ink. If there's a scabies burrow under the skin, the ink often remains, showing a dark irregular line. Occasionally a tiny dark dot is visible at the end of the burrow; that's a mite.

At the doctor's office, staff may use mineral oil and a scalpel to scrape the burrow and a fresh bump or two onto a microscope slide to look for the mite or its eggs and feces.

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Handout – Onsite Presentation

Crusted (Norwegian) Scabies

According to the Centers for Disease Control (CDC), a person infested with scabies only plays host to about 10 or 15 mites. However, a more severe case of scabies known as crusted or Norwegian scabies can involve hundreds or thousands of mites. This extreme infestation usually occurs in individuals who have a weakened immune system, or are elderly, disabled or ill. Persons with crusted scabies may not show the usually signs and symptoms of scabies such as the characteristic rash or itching. Persons with crusted scabies should receive quick and aggressive medical treatment for their infestation to prevent outbreaks of scabies.

Symptoms of crusted scabies are often different from less serious cases. Instead of the distinctive rash, the affected areas become covered in thick gray crusts. These crusts are full of scabies mites and eggs and cause the infested person (and their shed crusts) to be highly contagious to others.

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Review and Discussion

- Scabies is caused by an infestation of the upper layer of the skin by a microscopic mite. True False
- Scabies mites are not caused by skin-to-skin contact. True False
- Excessive itching can lead to sores and bacterial infection. True False
- Crusted (Norwegian) and non-crusted scabies are the same. True False
- All rashes look the same. True False

Describe crusted scabies. _____

What is nocturnal itching? _____

How Do We Treat Scabies?



Treatment for scabies is relatively simple compared to many other parasitic infestations. Various treatments are available but none will completely eradicate the itching immediately. The most common treatment is the application of a cream made from permethrin (an insecticide). This medication is safer than other insecticidal creams or an oral medication that is sometimes prescribed. Treatment decisions must be made in consultation with a medical provider as these medications are only available by prescription.

When a medicated cream is prescribed, the patient should shower first and then apply the cream from the neck down (do not apply on the face or near the eyes and mouth). The cream should be left on for eight hours and re-applied to hands and under the fingernails if they have been washed during that eight hours. This process is easier to do at bedtime. The cream is then showered off after eight to fourteen hours and only clean towels, linens, and clothes should be used.

Treatment for crusted scabies is similar, but much more aggressive due to the severity of the infestation. In addition to frequent treatment with the cream, an oral dose of ivermectin may be necessary to get rid of the parasites.

What Can We Do About the Itch That Will Not Quit??

Itching may persist for one to two weeks after treatment due to a hypersensitivity reaction and does not mean the scabies are still alive and require more insecticidal cream. Itching can be controlled with antihistamine pills. A physician may prescribe Benadryl at bedtime as it makes most people feel sleepy. For daytime use, non-sedating antihistamines such as Loratadine or Zyrtec can control the itchiness without sleepiness. Over the counter hydrocortisone cream may also be helpful to decrease the inflammation.

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APPENDIX A
Handout – Onsite Presentation

(Video)

Control and Surveillance

Establish Surveillance

- * Have an active program for early detection of infested patients and staff.
- * Maintain a high index of suspicion that scabies may be the cause of undiagnosed skin rash. Suspected cases should be evaluated and confirmed by obtaining skin scrapings.
- * Screen all new staff and patients for scabies.

Discussion

- * Do you have a program/plan in place? If so, what is the plan?
- * Does your facility report scabies to your local Health Department?

NOTES: _____

APPENDIX A

Handout – Onsite Presentation

Establish Procedures for Infection Control and Treatment

- * Maintain records with patient, name, age, sex, room number, roommate(s) names, skin scrapings status (if done), and name(s) of staff who provided hands-on care to the patient before implementation of infection control measures; symptoms can take up to 2 months to appear in exposed persons and staff.
- * Avoid direct skin-to-skin contact with any patient who has or is suspected to have scabies.
- * Use gloves when giving hands-on care to any patient who is confirmed or suspected to have scabies.
- * Wash hands thoroughly after providing care to any patient.
- * Avoid skin-to-skin contact with a person with scabies for at least 8 hours after application of scabies treatment.
- * Identify and treat all persons (staff, relatives, patients, etc.) having prolonged, direct skin-to-skin contact with an infested person before he/she was treated.
- * Offer treatment to household members (spouses, children) of staff who are receiving scabies treatment.
- * Staff generally may return to work the day after receiving a dose of treatment. However symptomatic staff who provide hands-on care to any patient may need to use disposable gloves for several days after treatment until sure they are no longer infested.
- * Use procedures that minimize risk of transmission of secondary bacterial infections that may develop with scabies.

NOTES: _____

APPENDIX A
Handout – Onsite Presentation

Establish Procedures for Environmental Disinfection

- * Machine wash and dry bedding and clothing of scabies patients using the hot water and hot dryer cycles.
- * Environmental disinfection is neither necessary nor warranted. Routine cleaning and vacuuming of the room should be done if and when a patient with non-crustated scabies leaves the facility or moves to a new room.



Communication

- * Establish procedures for identifying and notifying at-risk patients and staff who are no longer at the institution.
- * Ensure a proactive employee health service approach to scabies including providing information about scabies to all staff.
- * Maintain an open and cooperative attitude between management and staff.

NOTES: _____

Questions You May Ask or Things That Make You Go Hmmmmm.....

Can I Get Scabies From My Pet?

No. 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.



Can Scabies be Spread by Swimming in a Public Pool?

Scabies spread by prolonged skin-to-skin contact with a person who has scabies. Scabies sometimes can be spread by contact with items such as clothing, bedding, or towels, that have been used by a person with scabies, but such spread is very uncommon unless the infested person has crusted scabies.

Scabies is very unlikely to be spread by water in a swimming pool. Except for a person with crusted scabies, only about 10-15 mites are present on an infested person; it is extremely unlikely any would emerge from under wet skin.

How Can I Remove Scabies Mites From My Clothes?

Scabies mites do not survive more than 2-3 days away from human skin. Items such as bedding, clothing, and towels used by a person with scabies can be decontaminated by machine washing in hot water and drying using the hot cycle. Items that cannot be washed or dried can be decontaminated by removing them from all body contact for at least 72 hours. (The items may be placed in a bag that is then tightly tied.)

APPENDIX A

Handout – Onsite Presentation



How Can I Remove Scabies Mites From My House or Carpet?

Scabies mites do not survive more than 2-3 days away from human skin. Items such as bedding, clothing, towels used by a person with scabies can be decontaminated by machine washing in hot water and drying using the hot cycle. Because persons with crusted scabies are considered very infectious, careful vacuuming of furniture and carpets in rooms used by these persons is recommended.

Fumigation of living areas is unnecessary, but all carpets, upholstery, fabrics on the sofa and in the car must be vacuumed vigorously and the vacuum bag must be tied up well and disposed of immediately. If the vacuum device you are using has a container instead of a bag then the container must be washed with soap and hot water.

Facts

- Some products used to treat scabies in humans are available only with a doctor's prescription.
- Sleeping with or having sex with any scabies-infested person presents a high risk for transmission.
- The longer a person has skin-to-skin exposure, the greater the likelihood a transmission will occur. Although briefly shaking hands with a person who has non-crusted scabies could be considered as presenting a relatively low risk, holding the hand of a person with scabies for 5-10 minutes could be considered to present a relatively high risk of infection. However, transmission can occur even after brief skin- to-skin contact, such as a handshake, with a person who has crusted scabies.

APPENDIX A
Handout – Onsite Presentation

Words you may see or hear throughout this presentation

1. **Eradicate:** completely destroy
2. **Fumigation:** method of pest control
3. **Hypersensitivity:** a reaction in which the body produces an exaggerated immune response to a foreign agent.
4. **Disinfection:** process of cleaning something, especially with a chemical, in order to destroy bacteria
5. **Infested:** insects present in large numbers
6. **Transmission:** process of transmitting or spreading
7. **Symptomatic:** exhibiting or involving symptoms
8. **Psychogenic:** having a psychological symptom rather than a physical one

(Discussion and Questions)

NOTES: _____

Sources:

- [Centers for Disease Control and Prevention \(CDC\)](#)
- [The Ohio State University Wexner Medical Center](#)
- [AgingCare.com](#)

APPENDIX B
Sample Questions - Pre/Post Test

Stop That Mite!
Pre-Test / Post-Test

Name _____ Date _____

Facility _____

1. Scabies is:
 - a. An allergic reaction
 - b. A mite
 - c. A type of detergent used in a nursing facility.

2. Scabies infestations can cause emotional suffering in addition to physical symptoms.
 - a. True
 - b. False

3. As we age our skin becomes thinner and loses elasticity.
 - a. True
 - b. False

4. Itching is caused by a reaction to scabies mites...
 - a. As they crawl up your arm
 - b. As they burrow under the top layer of the skin to feed and lay eggs
 - c. As they grow older

5. Crusted Scabies is also called:
 - a. Norwegian scabies
 - b. Croatian scabies
 - c. South America scabies

6. Nocturnal Itching occurs:
 - a. At breakfast
 - b. At lunch
 - c. At night

APPENDIX B
Sample Questions - Pre/Post Test

7. All new patients should be screened for scabies.
 - a. True
 - b. False

8. Animals can spread human scabies.
 - a. True
 - b. False

9. Use gloves when giving hands-on care to any patient who is suspected of having or is confirmed to have scabies.
 - a. True
 - b. False

10. Machine wash and dry bedding and clothing exposed to scabies using:
 - a. Shampoo and a hair dryer
 - b. Hot water and hot dryer cycles
 - c. Delicate cycle and cool iron setting