Never Ending Story

A Scabies Outbreak

Virginia Epidemiology Seminar
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Karen McGoldrick, MT (ASCP), CIC

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Never Ending Story – a scabies outbreak…

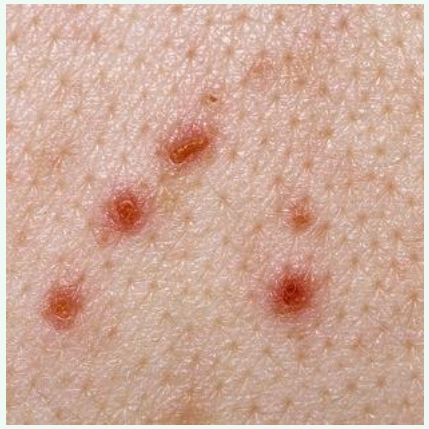
Learning Objectives:

Participants will be able to:

- Identify the difference between normal scabies and crusted scabies.
- Compare what protocols need to be followed to protect staff and patients when exposed to highly contagious crusted scabies vs regular scabies.
- Evaluate all staff members that might be at risk of exposure to ensure prophylactic treatment in a timely manner after a crusted scabies exposure.

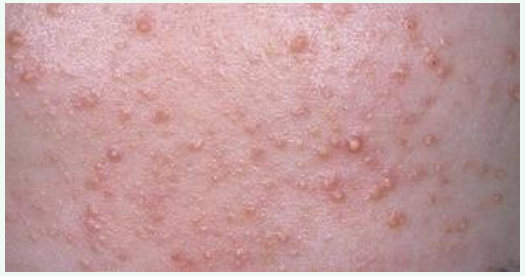
Scabies can be difficult to diagnose.

1



Scabies

2



Acne

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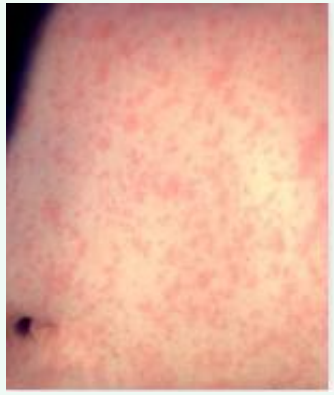

Measles

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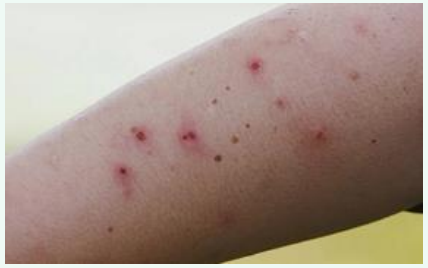

Mosquito Bites

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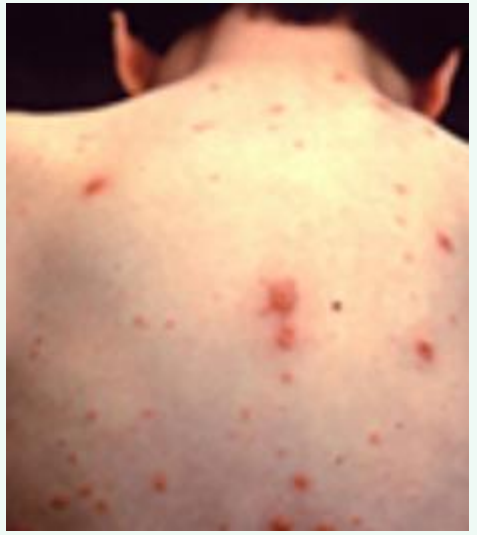

Chicken Pox

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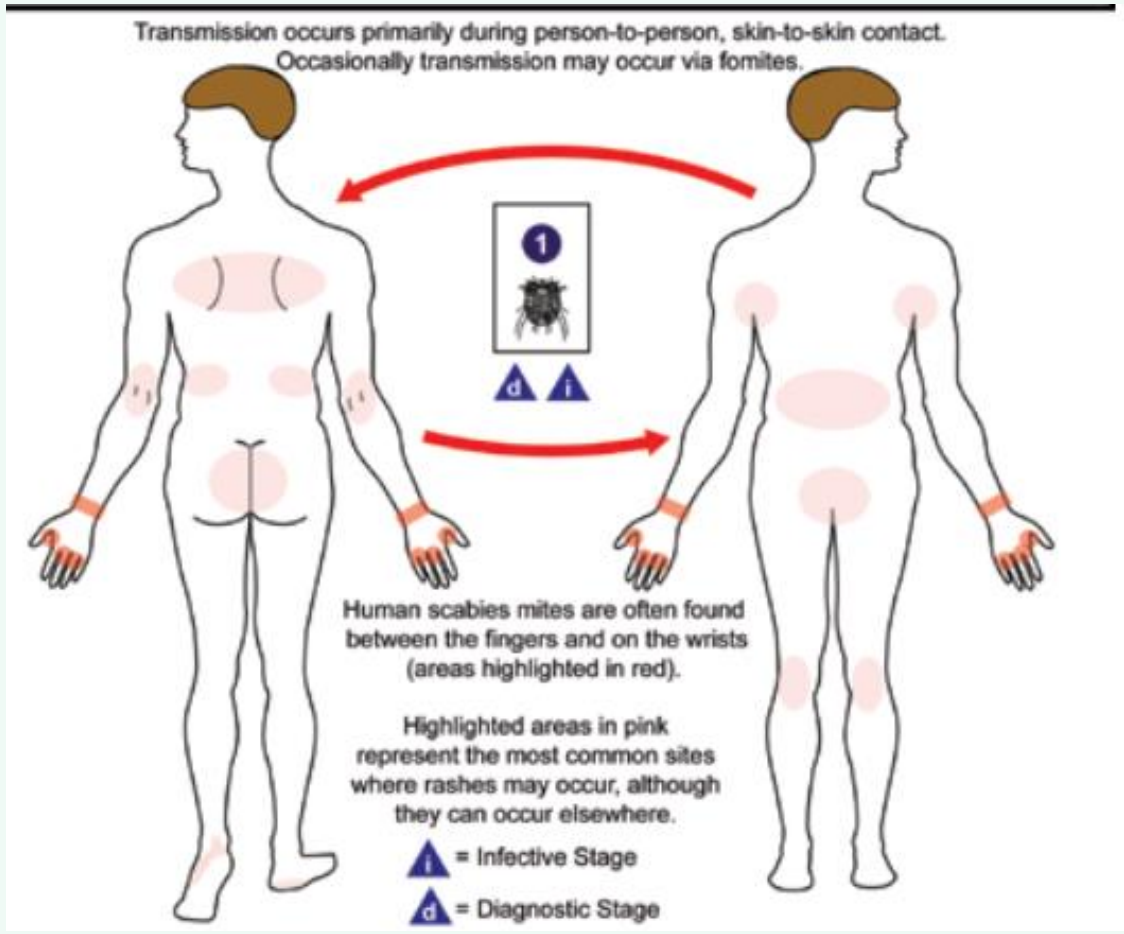
Epidemiology-symptoms

Scabies

- Allergic reaction-pruritic rash, severe itch, papules and sometimes linear burrows
- Various areas of body
- Transmission can occur in asymptomatic period



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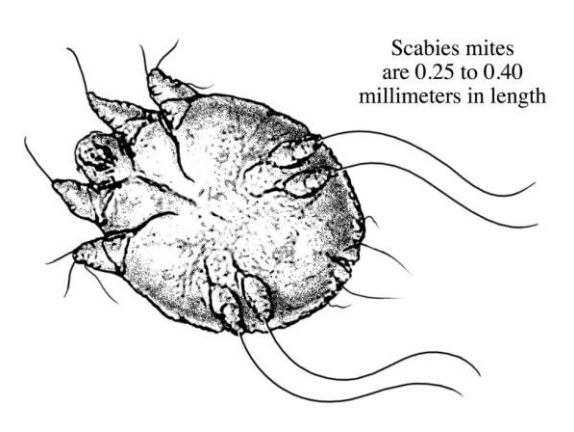
Epidemiology

Regular Scabies

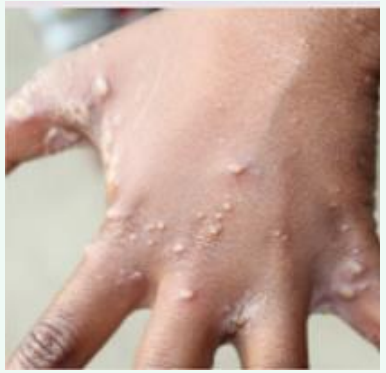
- Classic scabies transmission is by direct, **prolonged**, skin-to-skin contact, potentially sexually acquired
- Average mite load of 5-15

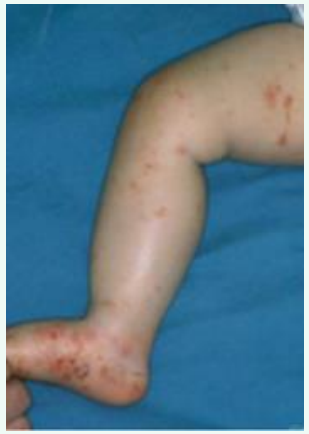


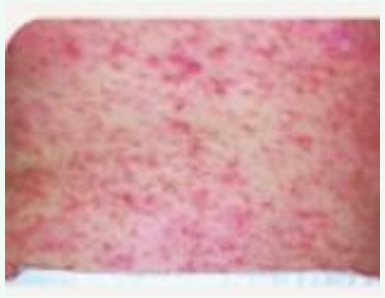
Crusted Scabies

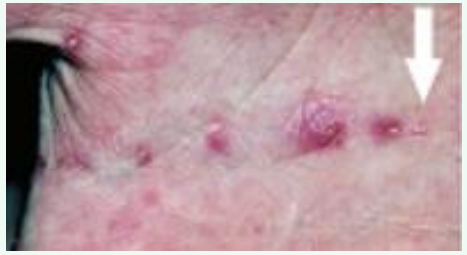
- Very contagious
  - Directly by brief skin-to-skin contact
  - Indirectly by contaminated items, such as clothing and linen
- Mite load-thousands to millions
- At risk-immunocompromised, elderly, disabled or debilitated persons

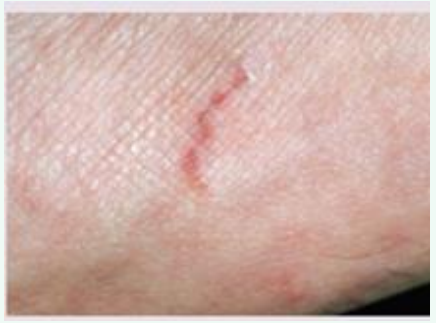
Regular Scabies



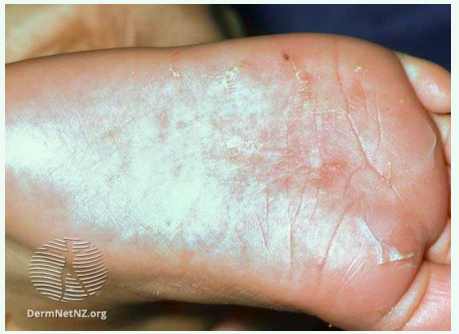


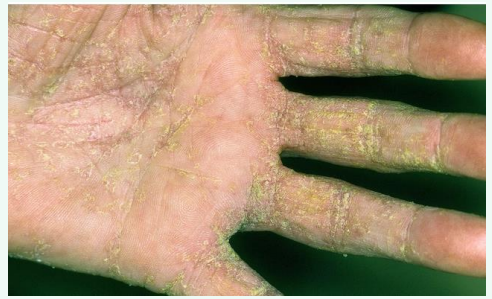


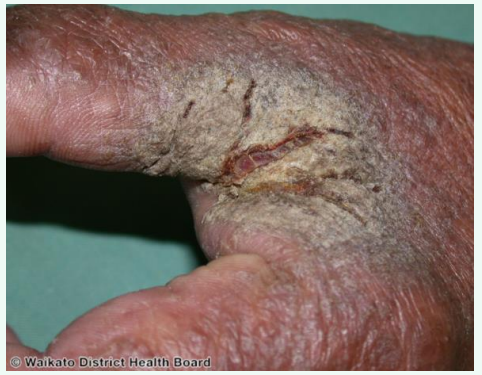


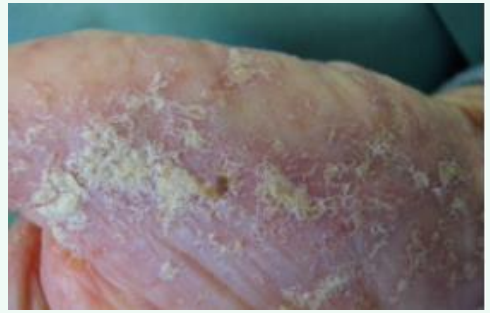


Crusted Scabies









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Treatment

Topical scabicide—most common permethrin 5% cream
Oral-ivermectin (not FDA approved)
Environmental—wash linens/clothing

Prophylaxis	Regular Scabies	Crusted Scabies
• Scabicide and possibly oral • 1-2 treatments	• Scabicide and possibly oral • 2 treatments • Weekly/biweekly	• Scabicide **and** oral • Permethrin—every 2-3 days for 1-2 weeks • Ivermectin-three, five or seven doses • Ivermectin dosing – days 1, 2, 8, 9, 15, 22

Treat close contacts at the same time as infected patient.

The Setting

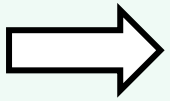
Once upon a time……

- Health Care System—12 hospitals
- 274-bed acute care hospital in Norfolk, Virginia
- One of the areas busiest emergency departments
- Numerous local area skilled nursing facilities
- Two Infection Preventionists

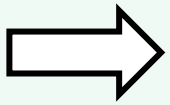
The Patient

Nov. 2 thru Nov. 6

- 91 y.o. male
- Admitted from assisted living facility
- Sepsis, dementia, thrombocytopenia severe cellulitis, lower extremity rash
- **Seen by dermatologist by facility—given steroid cream before admission**



- Steroid cream continued
- MSSA bacteremia
- Antibiotic related rash? switched antibiotics
- Possibly related to thrombocytopenia
- Rash continued to worsen

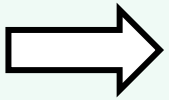


- Derm-diffuse eczematous rash on arms, leg trunk, developed over 2 months ago
- Hospitalist requests derm consult day 4
- Contact precautions
- Dermatologist obtained skin scrapings and confirms crusted scabies
- IPC notified

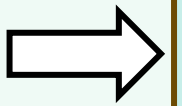
The Patient

Nov. 7 thru Nov. 9

- Crusted scabies confirmed
- Treat with ivermectin and topical scabicide
- IPC notified VDH EH, SLH IPC chairperson, administration, SH IPC director, assisted living facility, contracted linen service



- IPC provided EH with exposure timeline, transmission, incubation and communicability information
- Managers and MDs notified. Requested names of exposed
- Pharmacy notified



Inpatient pharmacy to dispense prophylaxis to approved staff members

The Staff

Nov. 13 thru Dec. 18

- 45 assessed and received prophylaxis
- Three employees with post prophylaxis complaints referred to derm

→

EH emailed weekly updates to IPC and administration

→

Final report

- 56 received prophylaxis
- Four consulted derm
- Two developed symptoms
- One employee with confirmed scabies

Infection Prevention and Control --provided daily support and education to managers and staff

Employee Health—provided counseling to employees and scabies toolkit to managers

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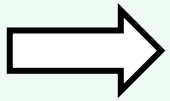
...or was it?

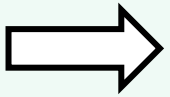
Employee: Rita Book *(alias)*

Feb 27 thru Mar 1

- IPC notified by EH of radiology employee Rita Book with scabies
- Rita was seen in Jan by primary MD-dx contact dermatitis
- Seen by dermatologist-skin scrapings positive



- IPC requested copy of work schedule and copy of MD notes with scabies confirmation
- Notified administration, quality dept., hospital infectious disease MD, System Infection Prevention director



- IPC interviewed Rita
- Employee toddler diagnosed with molluscum contagiosum by pediatrician in January
- Employee took daughter to urgent care—now scabies dx and treated

Employee: Rita Book *(alias)*

- IPC interviewed Rita again. Itching started in December
- Didn't see derm until Feb because it took several weeks to get an appointment

Mar. 5 thru Mar. 11

- Pt exposure meeting with admin, quality director, risk management, IPC, VDH
- Pt notification letter drafted
- Scabies hotline created
- Employee's scabies documentation received from EH

- Pt communication plan and pt letter finalized
- 432 letters mailed to exposed patients
- Sixteen patients called hotline. No rashes.

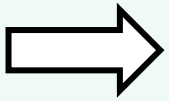
RB Patient 1 Notes

- Rita had contact with source patient—helped transfer patient to radiology table
- Employee missed from initial exposure investigation
- Rita had been on vacation at the time the manager was notified of exposure
- Manager did not know that Rita had helped with source patient
- Rita had missed diagnosis in January and was not diagnosed until over a month later.

…or was it?

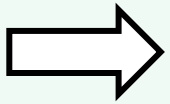
Employee: Paige Turner *(alias)*

- IPC notified of RT employee Paige Turner with scabies
- Paige went to dermatologist for 10-day old rash—called nonspecific dermatitis
- 2nd derm visit, 18 days later, linear papules on hands. Skin scraping positive



Mar 11 thru Mar. 19

- Per manager, Paige is surgery radiology tech
- Appeared Paige did not have contact with source patient



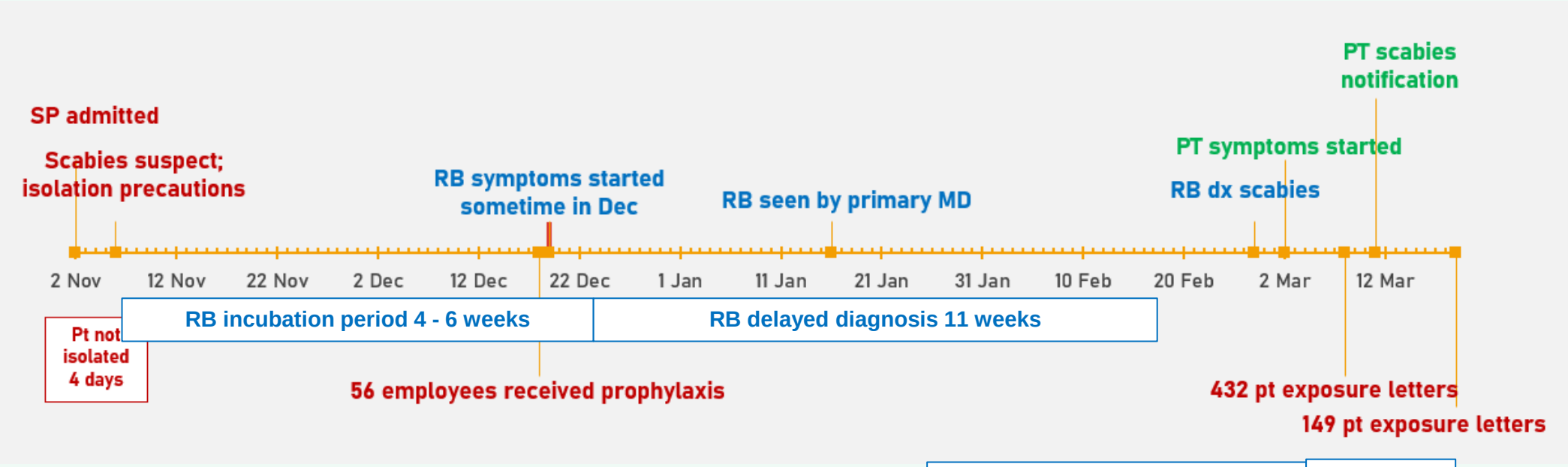
- Finalized list of surgery patients
- 140 letters mailed
- Received 2 calls from patients on scabies hotline

PT Employee 2 Notes

- No contact with source patient
- Possibly related to Rita Book?
- Delayed diagnosis
- Decision to add patients to outbreak list

...or was it?

Exposure and Outbreak Timeline



KEY:

SP = Source Patient

RB = Rita Book (Employee #1)

PT = Paige Turner (Employee #2)

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Notifications/Phone calls

Proactive letter to patients

- Risk very low, requires prolonged skin-to-skin contact
- Symptom end date
- **IPC Hotline created**
- **572 patient exposure letters mailed**

Scabies

Scabies is a skin condition caused by mites. It commonly leads to intense itching and a pimple-like skin rash that may affect various areas of the body. Scabies is contagious and can spread quickly in areas where people are in close physical contact.

How can I get scabies?

Scabies usually is spread by skin-to-skin contact with a person who has scabies.

- Scabies sometimes is spread indirectly by sharing items such as clothing, towels, or bedding used by an infested person.
- Scabies can spread easily under crowded conditions where close body and skin contact is common.

How can I prevent getting scabies?

Prevent scabies by avoiding skin-to-skin contact with a person who has scabies and contact with items such as clothing or bedding used by a person infested with scabies mites.

Indirect spread can occur more easily when a person has crusted scabies.

What are the symptoms of scabies?

Common symptoms of itching and a pimple-like skin rash may affect much of the body or be limited to common places such as:

- Between the fingers
- Wrist
- Elbow
- Armpit
- Genitals
- Nipple
- Waist
- Buttocks
- Shoulder blades

Symptoms affect the head, face, neck, palms and soles in infants and very young children, but usually not adults and older children.

When a person is first infested with scabies mites, it usually takes 2-6 weeks for symptoms to appear after being infested. If a person has had scabies before, symptoms appear 1-4 days after exposure.

An infested person can transmit scabies, even if they do not have symptoms, until they are successfully treated and the mites and eggs are destroyed.

How can scabies be treated?

Scabies should be treated with topical creams that can kill the mites, which are available by prescription from your health care provider. In addition to the infested person, treatment also is recommended for people they have been in contact with.

Bedding, clothing, and towels used by infested persons and people they are in close contact with should be decontaminated. To disinfest items,

- Wash them in hot water and dry in a hot dryer or dry-clean.
- Store items that can't be washed in a sealed plastic bag for at least 72 hours.
- Thoroughly clean and vacuum rooms.

CDC

For more information about scabies, visit https://www.cdc.gov/parasites/scabies/

CS284439-A October 30, 2017

IPC Hotline

- 18 phone calls
- Reassurance
- Six had rash, planned to see MD
- Two itchy, no rash, one planned to see MD
- Two developed rash outside of exposure window, one planned to see MD

???

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Exposure and Outbreak Investigations

It was.

Until next time….

Lessons Learned/Conclusion

1. Exposure line list must be as complete as possible.
   - Clear communication to managers to all staff present on that day.
   - Include **all** employees that did not access the medical record.
2. Provide reassurance to all exposed. Be prepared. Provide scabies FAQs.
3. Delayed and difficult diagnosis of scabies source patient and employee(s) has consequences for multiple parties.
4. Teledermatology consult can provide clinical and suspected scabies confirmation. If equivocal, face-to-face dermatology consults or microscopic diagnostic testing can be recommended.
5. After action discussion is important to provide awareness to all healthcare workers and help prevent reoccurrence.

References

1. Association for Professionals in Infection Control and Epidemiology. APIC Text Online (2023).
2. Bianchi, M. G., et al. (2021, Apr 27). Dermatologists' perceptions on the utility and limitations of teledermatology after examining 55,000 lesions. NIH National Library of Medicine. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8044615/.
3. Bimbi, C., et al. (2020). Basic Teledermatology Solving 2 Cases of Crusted Scabies. *Dermatologic Therapy*. 33. 10.1111/dth.14214. https://www.researchgate.net/publication/343803037_Basic_teledermatology_solving_2_cases_of_crusted_scabies?__cf_chl_tk=YSbpwFb2BkiJNNrOv37yAhE1UYK0wfqrJG70C6gDZmk-1695609194-0-gaNycGzND-U.
4. Centers for Disease Control and Prevention. (2023, June 6).

   Scabies. *https://www.cdc.gov/parasites/scabies/index.html*. Accessed Sep 17, 2023
5. Coates, T., et al., (2020) Ectoparasites: Scabies. *Journal of the American Academy of Dermatology*, 82(3). 533-548. https://doi.org/10.1016/j.jaad.2019.05.109.
6. Cohen, Philip R. (2020, Mar 25). Classic and Non-classic (Surrepticius) Scabies: Diagnostic and Treatment Consideration. NIH National Library of Medicine https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7186094/#:~:text=The%20number%20and%20frequency%20of,addition%20to%20topical%20keratolytic%20therapy.
7. Engelman, D., et al., (2020, Nov 1). The 2020 International Alliance for the Control of Scabies Consensus Criteria for the Diagnosis of Scabies. *British Journal of Dermatology*, 183 (5), 808-820. https://academic.oup.com/bjd/article/183/5/808/6600227.
8. Heymann, David L. (2015). *Control of Communicable Diseases Manual*, (2th ed.). American Public Health Association.
9. Public Health Image Library, https://phil.cdc.gov/.
10. Thomas, L. (2021 Rev). Crusted Scabies. DermNet. https://dermnetnz.org/topics/crusted-scabies. Accessed Sep 20, 2023.
11. WebMD. (2022, November 22). Scabies Slideshow: Symptoms, Cause, and Treatments. https://www.webmd.com/skin-problems-and-treatments/ss/slideshow-scabies-overview.

Note: See references for image sources.