What is scabies?

Scabies is a highly contagious skin condition that is caused by a mite called Sarcoptes scabiei. The mite burrows into the outer layers of human skin and survives there for up to a month. The mite also lays eggs which hatch and grow into adult mites. Symptoms of the condition can last for months or even years. Scabies is not an infection, but an infestation that can lead to relentless itching that can cause severe distress.

A more serious and rare form of scabies called Crusted Norwegian scabies, develops in people who have a weak immune system due to a medical condition, the elderly, and people who are living in institutions. Crusted scabies develops when the person's body cannot develop any resistance to the mites. Without resistance, the mites quickly multiply.

Transmission

Scabies typically spreads through prolonged, skin-to-skin contact that gives the mites time to crawl from one person to another. It is not likely to spread by a quick handshake or hug. The scabies mite cannot jump or fly, and it crawls very slowly. Shared personal items, such as bedding or towels, may occasionally be to blame. Scabies can be passed easily between family members or sexual partners. Without a human host the mite can live up to three days in the environment. During that time, persons can potentially acquire the mite again through prolonged skin contact. With a prolific number of mites present in cases of crusted scabies, it is more contagious and mites present in cases of crusted scabies, it is more contagious and contagious.

Symptoms onset: a week to six weeks

• Usually 15 to 20 mites on skin at any given time
• Symptoms onset: a week to six weeks
• Typically 100s or even 1,000s on skin at any given time
• Symptoms onset: within 48 hours

Scabies is most commonly found in the area between the fingers, wrists, axillae, and groins. Onset of symptoms can vary from 7 to 21 days. The rash is characterized by small, reddened, or brownish inflammatory papules, which may later coalesce into larger plaques. Scratching of the rash results in the formation of excoriations, which may bleed and crust over. The skin becomes thick and crumbly, and small nodules or burrows may appear on the skin. The most common symptoms are intense itching and the presence of silver-gray, yellowish, or brownish burrows. The burrows are caused by the mite burrowing into the skin and laying eggs. The burrows are typically found on the wrists, elbows, and ankles, but can also be found on other parts of the body. The mites are most active at night, so the itching is often worse at night.

Identification – Scabies are so small a microscope is required to see them. A common sign of crusted scabies is widespread crusts on the skin. These crusts tend to be thick, crumbly easily when touched, and look grayish in color. Sometimes the crusts appear on one or even a few areas of the body such as the back, hands or feet.

Initial Outbreak

On August 27, 2012, our source patient was admitted to the hospital. At that time, the physicians were unsure of the cause of the skin condition. The skin was so frail and fragile, it literally would fall off with the slightest of care. The medical staff used gloves when caring for the patient, but no additional PPE (personal protective equipment). This patient deteriorated and expired three days later.

On Tuesday morning, September 4, 2012, the first nurse complained of a terrible rash that had developed over the weekend. The nurse contacted a medical physician and received treatment. That same day, two other nursing staff developed similar complaints of an itching rash, mostly at night.

Patches were sent to the WNH Infectious Disease Consultant. A scraping was ordered and a scabies mite was observed clearly under the microscope, with cases confirmed.

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Results

The local health department worked with the IP (Infection Preventionist) from WNH to communicate with area health care providers to solidify a common message. If there is a rash, and it itches, consider the possibility of scabies, and then treat appropriately. KDHE was contacted. The fact is, scabies is not a reportable infection, but an infestation that can cause severe distress. The physicians were unsure of the cause of the skin condition. The skin was so frail and fragile, it literally would fall off with the slightest of care. The medical staff used gloves when caring for the patient, but no additional PPE (personal protective equipment). This patient deteriorated and expired three days later.

The facility housing the source patient was contacted. The administration elected not to be aggressive in the treatment of all employees and residents. As time progressed, residents sought out treatment independently. Later the administration elected to treat a segment of the staff and residents. Delayed surveillance prolonged the ongoing outbreak.

Response Team

In 2011, William Newton Hospital (WNH) had joined together with the local health department and another nearby hospital. This team of professionals offered education on the prevention of infections to several health care facilities. With the identification of a scabies outbreak in August 2012, the foundation laid by this previous collaboration enhanced the ability of the group to work together towards stopping the transmission of scabies.

Further Results

WNH employees were on high alert for scabies assessments. All new admissions received heightened skin assessments. Once discovered, these patients were placed in the appropriate contact precautions. This high alert status continues today.

The local health department did follow up communication with local long term care facilities. Treatment methods were recommended.

January 4, 2013 a local physician champion called asking what could be done to stop the scabies problem. The physician was very open and receptive, and became the local voice with the health care facilities to appropriately handle the scabies outbreak.

New cases of scabies were reported nearly daily in the WNH emergency room. Many were employed at the source facility. Twenty confirmed new cases of scabies as the primary diagnosis were seen in the ER. Many more secondary cases occurred. The local physicians were reporting many cases in their clinics. The mortality came down with scabies as a result of exposure to the source patient. If we all were to follow the best practice for our specific professions, would these exposures have been less?

Discussion

In October, a second case was admitted to WNH from the same facility. Three more employees were exposed and experienced symptoms, requiring additional treatment. Two more cases occurred through the ED and EMS, which resulted in additional exposures.

Cost and Analysis

There were many hard and soft costs involved in the scabies outbreak in Cowley County. From WNH’s perspective, 25 employees, 1 physician, and 2 patients were treated for the scabies as a result of the exposure starting on August 27, 2012. 74 treatments were prescribed with permethrin cream (Elimite) and two employees also received the ivermectin pills, as well as, symptomatic relief agents.

In the midst of the scabies outbreak, WNH’s employee health physician resigned the position. Additional costs were incurred due to employees receiving care outside of the hospital system.

Many employees experienced additional stresses above and beyond their job duties. Other “soft” costs which cannot be measured were the cost of staff anxiety, and inter-agency turmoil with communication challenges. These difficulties cost the community in professional complexities.

Raising the awareness of appropriate use of PPE in standard precautions has been the area of greatest learning from this experience. “Whenever we don’t know what we are dealing with, PPE is necessary.” WNH employees are experts in skin assessments and know when to put on their PPE. Much has been learned and gained from this scabies outbreak experience.

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William Newton Hospital is a 25-bed, rural, Critical Access hospital in Cowley County, Kansas. Winfield, KS is approximately 12,000 people.

WNH has approximately 330 employees with five rural health clinics.