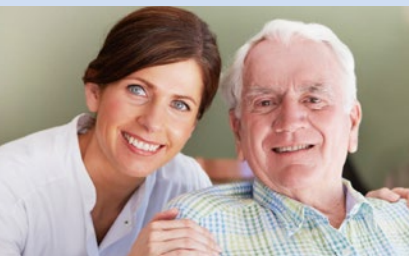




North Central Health Care

Person centered. Outcome focused.

Winning the War Against Scabies in a Long Term Care Facility



By Miki Gould, Safety and Risk Manager, North Central Health Care

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Infection prevention in a long term care facility can be a unique challenge. It requires the integration of a resident's home into the healthcare facility's comprehensive infection prevention strategy and plan. The general health of the facility's population complicates the issue, since many individuals may be severely compromised. While infection prevention has had a long history of application in acute care and ambulatory settings, its application in long term care and assisted living facilities is relatively new, and is yet undefined. Infectious disease outbreaks can occur with horrible consequences if the facility has not accepted the probability of such an adverse event happening and having in place a protocol and equipment to ensure that the situation can be quickly contained and eliminated.

Management needs to be aware that residents and staff share sources of air, food, water and space, and this close environment facilitates the spread of infection. Any containment and elimination protocol must be formulated and executed with this in mind. In addition to the internal risks, facilities need to consider risks that come from outside the facility. Similar to a hospital setting, the facility's visitors, staff and equipment can be both a source of pathogens and are a vector for their spread.

Each nursing home is unique in its population mix and demographics. In general, the advanced age of the population increases their vulnerability to infection. Increased frailty, dementia, decreased immune function, decreased skin integrity and wounds, problems with nutrition, chewing and swallowing, Issues with incontinence, decreased bowel and bladder function and decreased mobility put long term care individuals at greater risk of contracting infectious disease from both endemic and external contamination. Published literature is replete with articles establishing that nursing home residents continue to be a reservoir of pathogens.

In the past, housekeeping is traditionally the key department tasked with maintaining cleanliness of the facility. North Central Health Care (NCHC) recognizes that their housekeeping team alone cannot prevent infections. Despite the adoption of some new techniques to the infection prevention arsenal, such as cleaning with microfiber, instituting a quality-control program, and monitoring cleanliness using an ATP system, it was found that a gap existed allowing for cross-contamination and outbreaks.

NCHC adopted a three-phase approach in an attempt to close the gap and prevent the spread of infection. Step one was to bring in a full time employee to manage infection prevention and safety. The second was to roll out a comprehensive education program for staff and explain the reasons for the program. Patient and staff safety was strongly emphasized. NCHC created a series of educational models that built a solid foundation for not only staff but additionally facility residents and visitors.

Lastly, there needed to be a turn to technology. While technology is only one piece of the puzzle, it was felt that it was an important piece and required a well-researched and thoughtful selection of products. It was necessary to identify a system that could ensure a 100% disinfection of patient rooms, common areas and all equipment/fabrics in those areas as well. Selecting a product that was a right fit for the organization was key.

NCHC is continually looking for creative ways to reduce the risk to residents and staff of infectious organisms. In July of 2015, infection prevention was notified of a possible scabies outbreak on a dementia care unit. Upon the initial investigation, it was determined that the case seemed to be a contact dermatitis. Standard protocol was followed and the residents and staff were treated, dresser drawers were taped off for seven days and standard

terminal cleaning was done on any room that had residents identify with a rash. At that time, no other areas were disinfected. Upon a second outbreak, the entire neighborhood unit followed protocol. That neighborhood unit consisted of twenty four rooms, thirty six residents, eighty five staff members, and the common area. Drawers and cabinets continued to be taped off. That process took three days to complete. Over 250 additional man hours were used to attempt to irradiate scabies from the dementia neighborhood unit at cost of approximately \$35,000 for this single outbreak. It was not exactly conclusive that these efforts would work as dementia residents had a difficult time comprehending why their personal effects had to remain taped off in cabinet drawers. Having the full compliance of all involved was very challenging and difficult to maintain.

In late August, additional residents and staff again began showing signs and symptoms of a skin issue. It would be difficult for the nursing home to consume another \$35,000 outbreak. Though, initial success was achieved, it was recognized that scabies was never completely eradicated from the neighborhood unit. NCHC's team determined that a better procedure needed to be adopted to guarantee that the scabies risk was totally eliminated from the units. The team initiated a search for options that would remove the organism and break the cycle. Several high-level disinfection technologies including UV light and hydrogen peroxide systems were considered.

After an evaluation of the current technologies on the market, UV light was excluded because of its inability to kill scabies, which at the time was the immediate need. Additionally, in the case of future MDRO outbreaks, a technology was necessary that would kill 100% of all spores, viruses and bacteria on every surface in the room without having to remove soft surfaces and equipment. Soft surfaces are a concern for every MDRO, but they are a special concern during a scabies outbreak because that is typically where mites often reside. Based on the criteria we outlined for the facility, the only technology that could meet its needs was the Altapure ultrasonic high-level disinfection system.

In September of 2014, a company founded in Wisconsin named Altapure was contacted. The company was known by the medical director due to their ability to completely kill all organisms on every surface, their use of an EPA-approved safe chemical, and their ability to turn over rooms in under one hour. An equipment purchase proposal was planned for the purchase of the system in June 2016, however, in December of 2015, an individual suspicious for scabies identified and later confirmed positive. Another outbreak was possible. The decision was made to move up the implementation of the Altapure system.

Altapure offered a rent-to-own option that allowed NCHC to utilize the system immediately for a monthly rental fee, with a portion of the rental expense applied to the capital purchase in the following summer.

The team worked with the Altapure team to develop a protocol to stop the spread of scabies in the facility. The process began with individuals who did not show any signs or symptoms of scabies and their rooms were decontaminated. Then primary source was placed into contact isolation and was treated upon confirmation of skin scrapings. The protocol is outlined below:

| Time | What | Who |
|-------------------------------|--|-----------------|
| Evening before Major Cleaning | <p>Apply the appropriate anti-scabies cream to residents in neighborhood</p> <p><u>Altapure</u>: treat common area for residents to proceed to once they are clean and while they wait for their rooms to be ready.</p> <p>Place any unused equipment in room to be treated</p> <p><u>Altapure</u>: treat the shower room.</p> <p>Dispose of all lotions, creams and shampoos.</p> <p>Add to room:</p> | RN Staff CNA |

| | | |
|-----------------------------------|--|------------------------------------|
| | <p>Clean clothes for after bathing/showering</p> <p>Slings</p> <p>Lifts</p> <p>Robes</p> <p>Towels</p> | |
| <p>Morning of Major Cleaning:</p> | <p>All patients who are known or suspected positive should be in contact isolation. Nursing will take resident to shower. They will take dirty chair and transfer the individual to a shower chair. Take the dirty chair back to the resident's room. Resident is showered. Shower equipment will be then decontaminated with healthcare-approved disinfectant. Apply disinfectant liberally and allow to sit for 10 minutes. A clean temporary chair/bed will be available for the individual post shower.</p> <p>Go to the first resident dirty room:</p> <p>Wear PPE (Gowns, Gloves)</p> <p>Clean all surfaces in room to ensure free of debris</p> <p>Hang as much of the clothing as possible. The remainder of the clothing can be sent to laundry.</p> <p>Use racks for patients belonging to be exposed to the aerosol. Rearrange items to give the mist adequate air flow. Any items that cannot be placed on a rack should be put in a drawer and taped off. Mark the drawers initial closing-off date and indicate the next date it can be opened (7 days from initial taping off).</p> <p>Bring in any extra equipment that would be needed for the next individual to be transferred to (wheelchair, vent, oxygen etc.) Wipe off this equipment to remove any debris.</p> <p>Open all doors, drawers and cabinets that are in the room to allow mist to penetrate area.</p> <p>Once room is ready to go:</p> <p>Cover all air vents with Altaure's automatic vent covers and tape the door leading to the hallway.</p> <p>Place sign on door with approximate time that the room will be ready to be opened.</p> <p>Start the machine and then move to the next room for prepping.</p> <p>Once the room has been deemed a Decontaminated Room</p> <p>Put items away and move machine to new room.</p> | <p>Housekeeping</p> <p>Nursing</p> |

In December, another unit also had a scabies exposure. The protocol above as initiated and within 18 hours the situation was contained and no additional staff or residents contracted the skin disease.

Before incorporating Altapure into protocol, there were three outbreaks of scabies in a six month time period. After incorporating Altapure into protocol, there has not been a single case of scabies reported and the infection prevention team is confident that the cycle of outbreaks has been broken.

Technology is only one piece of the puzzle when attacking cross-contamination and outbreaks, however experience has shown that it is a very important piece. The manual labor approach was more time consuming, less cost-effective, and due to the human element, it was uncertain that every nook, cranny and soft surface was completely free of scabies. Based on reoccurring outbreaks, it was determined that the rooms were not completely free of the mites after cleaning. Altapure's system delivered on its promise of pure peace of mind. Now that our scabies outbreak has been remediated, the system is being used to disinfect rooms after every discharge, ensuring that all incoming patients have a completely clean room.



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Miki Gould is a Safety and Risk Manager at North Central Health Care (NCHC) in Wausau, WI. NCHC is a non-profit health care organization that provides quality, accessible specialized care to people of all ages in Marathon, Lincoln and Langlade Counties in Central Wisconsin. Mental health, both inpatient and outpatient treatment, crisis services, addiction therapy and counseling, developmental disability care, adult protective services, and aquatic physical therapy are available for our communities. Centers are conveniently located in Wausau, Antigo and Merrill with a local office in Tomahawk, WI, for mental health care, substance abuse and developmental disability support and services. NCHC also operates Mount View Care Center, a 240-bed skilled nursing home that provides long term care, short term rehabilitation, specialized dementia care and ventilator dependent care.