

Managing MRSA in the Laundry

By Linda Fairbanks, ALM Director of Academic Affairs

It's virtually impossible today to pick up a newspaper or watch a news report that someone isn't talking about MRSA. What is MRSA? How is it spread? How does MRSA apply to a laundry processing operation? With so much concern about MRSA how do laundry personnel make sure that they don't bring this home to their families?

First of all, what is MRSA? "Methicillin-resistant *Staphylococcus aureus* (MRSA) refers to types of Staph that are resistant to a type of antibiotic, specifically Methicillin."ⁱ

The CDC/NIOSH web article "MRSA and the Workplace", goes on to explain quite succinctly:

Staphylococcus aureus, often referred to simply as "staph," is a type of bacteria commonly carried on the skin or in the nose of healthy people. Sometimes, staph can cause an infection. Staph bacteria are one of the most common causes of skin infections in the United States. Most of these skin infections are minor (such as pustules and boils) and can be treated without antibiotics. However, staph bacteria also can cause serious infections (such as surgical wound infections, bloodstream infections, and pneumonia).

MRSA is often resistant to other antibiotics as well (in addition to Methicillin). While 25% to 30% of the population is colonized with staph (meaning that bacteria are present, but not causing an infection with staph), approximately 1% is colonized with MRSA.

Staph infections, including MRSA, occur most frequently among persons in hospitals and healthcare facilities (such as nursing homes and dialysis centers) who have weakened immune systems. These healthcare-associated staph infections include surgical wound infections, urinary tract infections, bloodstream infections, and pneumonia.

Staph and MRSA can also cause illness in persons outside of hospitals and healthcare facilities. MRSA infections that are acquired by persons who have not been recently (within the past year) hospitalized or had a medical procedure (such as dialysis, surgery, catheters) are known as community-associated MRSA infections.

Staph or MRSA infections in the community are usually manifested as skin infections that look like pimples or boils and occur in otherwise healthy people.

"MRSA skin infections can occur anywhere. However, some settings have factors that make it easier for MRSA to be transmitted. These factors, referred to as the 5 C's, are as follows:

- Crowding,
- frequent skin-to-skin Contact,
- Compromised skin (i.e., cuts or abrasions),
- Contaminated items and surfaces, and
- lack of Cleanliness.

Locations where the 5 C's are common include schools, dormitories, military barracks, households, correctional facilities, and daycare centers."ⁱⁱ

This helps to explain why we are seeing a number of MRSA outbreaks in schools, with players on a football team, and in day care situations. In each of these environments you have *Crowding* and frequent skin-to-skin *Contact*. To reduce these incidents from occurring individuals in these situations should practice good hygiene through frequent washing of their clothing according to

manufacturer's instructions and thorough drying. Good hand hygiene is a must and covering an open wound, sore or abrasion will not allow the potential infection a portal for entry.

Infection control professionals reference the "Chain of Infection" as a guide for the prevention of infections. The concept is a simple one; there are five requirements for the spread of infection. To break the cycle of infection, eliminate **just one** of these five and infection will not occur.ⁱⁱⁱ

FIVE REQUIREMENTS FOR THE SPREAD OF INFECTION

1. A pathogen,
2. Sufficient numbers of the pathogen,
3. A susceptible host,
4. A mode of transmission, and
5. A correct portal of entry.

To apply this concept to a typical laundry situation, the scenario below is provided.

1. The pathogen, in this scenario, is Hepatitis B, present in a bloody fluid soaked towel in the laundry pre-sort area.
2. The number of pathogens in this sample are of sufficient quantity to generate an infection if provided the opportunity.
3. The laundry soil sort personnel has opted not to take the Hepatitis B vaccination series provided by their employer; thus providing our scenario with a susceptible host.
4. Hidden in the fluid soaked towel is an overlooked sharps; a single needle. Had the needle not been present, the presence of the Hepatitis B would not have had an impact; but the single needle stick provides the Hepatitis B with a mode of transmission.
5. The final element, a correct portal of entry, has been provided and the Hepatitis now has the ability to enter the laundry soil-sort personnel.

Based on this information, a laundry worker who adheres to Standard Precautions in the laundry processing operation would typically stand a better chance of becoming infected with an infection, such as MRSA, *outside* of the work

environment. The emphasis is on the adherence to Standard Precautions; to treat all products as though they have been exposed to bloodborne pathogens. These standards, required by OSHA, are designed for jobs that have a likelihood of exposure to bloodborne pathogens. If proper Standard Precaution measures are followed then laundry personnel are potentially safe at work from exposure to MRSA.

This very practical approach is designed to guide individuals to remain safe. If an MRSA bacteria is present on a co-workers hands, in sufficient numbers, and for some reason you are susceptible, and have been in close contact with the infected individual but you have no open sores, cuts, etc. (or you have a sore yet have wisely kept that area appropriately covered) and you practice good hand hygiene by frequently washing your hands and avoid touching your eyes, face, etc. then the staph bacteria does not have a correct portal of entry and a mode of transmission is not provided.

In a proper healthcare laundry, environment mechanisms, such as the OSHA guidelines for bloodborne pathogens regulations, are in place to minimize the risk of infection for employees. The laundry soil sort personnel are required to wear gloves (disposable or reusable utility gloves), a gown to protect their clothing and/or person from accidental contamination, and workers are prohibited from eating or drinking, applying cosmetics or contact lenses in an area where they could potentially be exposed to pathogens.

When laundry pre-sort personnel fail to remove their gowns and/or gloves when leaving the work area to take a break, they are putting themselves at the greatest risk of exposure to pathogens and bacteria such as MRSA. If, in the performance of their job, their gloves or gown have become contaminated with MRSA bacteria and they proceed to the break room to eat, drink or even to smoke a cigarette it provides a mode of transmission and a portal of entry for this bacteria. Following proper procedures for removal of their gloves and gown and thoroughly washing their hands will circumvent the exposure. Safety is up to the individual. According to the article, MRSA in Healthcare Settings, "The main mode of transmission to other patients is through human hands, especially healthcare workers' hands."

"MRSA is becoming more prevalent in healthcare settings. "According to CDC data, the proportion of infections that are antimicrobial resistant has been growing. In 1974, MRSA infections accounted for two percent (2%) of the total number of staph infections; in 1995 it was 22%; and in 2004 it was 63%."

MRSA is preventable, but it takes conscious effort. The first, and most basic step that is that proper precautions are taken, personal protective equipment is worn appropriately, and removed according to recommendations and proper hand hygiene is completed then the incidents of MRSA in the healthcare workplace can be greatly reduced.

Are special precautions needed in the laundry? On patient floors additional precautions are taken to avoid the spread of infections and cross-contamination from patient-to-patient or through a care-giver. Patient contact is limited to isolation precautions, droplet precautions, and/or airborne precautions; are these needed in the laundry operation? No, these precautions are in place to prevent/reduce the spread of infection, such as MRSA, from patient-to-patient. These additional precautions are in place to protect the patient from exposure. The adherence to employee compliance with bloodborne pathogens and standard precautions will maintain a safe working environment for laundry personnel. Proper processing, appropriate chemical formulations for the water temperatures utilized, and following recommended handling of the hygienically clean textiles provide a quality product to patients and provides a safe working environment for laundry personnel.

Make it easy for personnel to comply:

- Utilize signage to remind laundry personnel to remove PPE prior to leaving the soil-sort area
- Provide containers at the doorway from the soil-sort area to collect soiled gowns and gloves.

- Placement of alcohol-based hand cleaning products where PPE is removed serves as a reminder and makes compliance easier.
- Don't allow food or beverages in the soil-sort area.
- Regular scheduled cleaning of work surfaces with appropriate disinfectants especially on the soil-sort side of the laundry operation.
- If a laundry worker (soiled side or clean side) has an open wound or sore make sure it remains adequately covered until fully healed.
- Practice what you preach - when leaving the soil-sort area are laundry management personnel practicing good hand hygiene?

The approach to infection control in a healthcare laundry operation has often been referred to as a "common sense approach". Use basic common sense and follow standard precautions and bloodborne pathogens regulations and we can keep both patient and employees safe from MRSA and other opportunistic infections.

- i "MRSA and the Workplace", internet based article, <http://www.cdc.gov/niosh/topics/mrsa/>
- ii "MRSA and the Workplace", internet based article, <http://www.cdc.gov/niosh/topics/mrsa/>
- iii Greene VW. Microbiological contamination control in hospitals. Hospitals JAHA 1969; 43: 78-88.

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