Methicillin-resistant *Staphylococcus Aureus* (staf-e-le-ko-kas ari-as)

What is healthcare-associated MRSA?
Methicillin-resistant *Staphylococcus aureus* (MRSA) is a type of staph bacteria that does not react to certain antibiotics and will normally cause skin infections, but MRSA can also cause other infections— including pneumonia. MRSA can be fatal. In 1974, MRSA infections accounted for two percent of the total number of staph infections; in 1995, it was 22%; in 2004, it was 63%. Staph infections, including MRSA, occur most often among people in hospitals and healthcare facilities (such as nursing homes and dialysis centers) who have weakened immune systems.

How is healthcare-associated MRSA spread?
In the case of MRSA, patients who already have a MRSA infection or who carry the bacteria on their bodies but do not have symptoms (colonized) are the most common sources of transmission.

The main mode of transmission to other patients is through human hands, especially healthcare workers' hands. Hands may become contaminated with MRSA bacteria by contact with infected or colonized patients. If appropriate hand hygiene such as washing with soap and water or using an alcohol-based hand sanitizer is not performed, the bacteria can be spread when the healthcare worker touches other patients.

There are 5 "C" factors that can contribute to the spread of MRSA:
- Contact – frequent skin-to-skin contact with a person who is infected
- Compromised skin – breaks in the skin allow pathogens to enter more easily
- Contaminated items and surfaces – for example towels and shared equipment
- Lack of Cleanliness – such as not washing hands regularly
- Crowding – germs spread more easily in close quarters

What are the symptoms of MRSA infection?
Most staph infections, including MRSA, will grow as a bump or infected area on the skin. Signs of a MRSA infection on skin include:
- redness
- swelling
- pain
- warm to the touch
- full of pus or other drainage
- fever

What is the treatment for MRSA?
Treatment for MRSA skin infections may include having a healthcare professional drain the infection and, in some cases, prescribe an antibiotic. A patient should be instructed not to attempt to drain the infection himself/herself as doing so could worsen or spread the infection to others.

If an antibiotic is given, the patient should be sure to take all of the doses (even if the infection is getting better), unless instructed to stop taking the antibiotic by a healthcare professional.

Skin and soft tissue infections (SSTIs), specifically furuncles (abscessed hair follicles or "boils"), carbuncles (coalesced masses of furuncles), and abscesses, are the most frequently reported clinical manifestations.

Images: Courtesy of the Centers for Disease Control and Prevention

How can healthcare-associated MRSA be prevented?
In most instances in the healthcare setting, following **Standard Precautions**, as described in the [Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings 2007](#), should control the spread of MRSA.

Standard Precautions include:
1) Hand hygiene
2) Gloving
3) Mouth, nose, eye protection
4) Gowning
5) Appropriate device handling of patient care equipment and instruments/devices
6) Appropriate handling of laundry – Handle, transport, and process used linen to avoid contamination of air, surfaces, and persons.

In some instances **Contact Precautions** should be followed. To determine if a patient needs to be placed on Contact Precautions, see page 37 of [Management of Multi-drug Resistant Organisms in Healthcare Settings, 2006.](#)

In addition to Standard Precaution, Contact Precautions consist of the following:
1) Patient placement
2) Gloving
3) Gowning
4) Patient transport
5) Patient-care equipment and instruments/devices
6) Environmental measures

For more information regarding MRSA, visit the following resources:
- CDC's Healthcare-associated MRSA website - http://www.cdc.gov/mrsa
- http://www.cdc.gov/mrsa/healthcare/index.html