

**COMMUNITY ASSOCIATED METHICILLIN RESISTANT
STAPHYLOCOCCUS AUREUS
(CA MRSA)**

Guidelines for Controlling Transmission among Students and Athletes

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CA MRSA is a bacterium that is estimated to be carried in the nose or on the skin of about 1% of the population. When CA MRSA causes illness, it usually causes mild skin infections such as abscesses or boils but occasionally it may cause more serious skin and soft tissue infections. Cases of invasive disease such as blood stream infections and pneumonia have occurred but are rare in healthy individuals. CA MRSA is resistant to some antibiotics such as amoxicillin, but can be treated with several other commonly used antibiotics. Many infections can be treated successfully without antibiotics.

CA MRSA is spread by direct person to person contact, by contact with contaminated surfaces and equipment, or by sharing personal items such as used towels, razors, and bandages.

The following recommendations will help reduce transmission of CA MRSA among students and athletes in school settings.

Keep skin clean

- Hand washing facilities, soap, and alcohol hand sanitizers should be readily available to all staff and students to encourage good hand hygiene. Alcohol hand sanitizers should be provided in situations where sinks, soap, and water are not available.
- Sports team members should be expected to shower after team practices and sports events.
- Persons doing wound care or examining skin lesions should wear disposable gloves when in contact with infected areas and should wash hands immediately after discarding gloves.
- Students should not share personal items such as towels, razors, soap bars, water bottles, used equipment, or unlaundered uniforms.

Keep skin protected

- Ensure that all sports team members wear suitable protective gear during all sports activities to help keep skin intact.
- If cuts or breaks in the skin occur, clean the area with soap and water and cover with a bandage or clean, dry dressing.

Early detection of skin infections

Students and athletes should be instructed to report open wounds and skin infections to a designated person such as the school nurse or athletic coach. Routine active screening of students for signs and symptoms of skin infection may not be necessary unless an outbreak (three or more cases among close contacts) is suspected (see management of outbreaks below).

Signs and symptoms of skin infections include lesions that may appear as pustules or boils which are often red, swollen, painful, or have pus or other drainage. Lesions may be misdiagnosed as "spider bites."

Exclusion of persons with skin infections

If infected areas can be covered and wound drainage is contained with bandages or clean, dry dressings, infected persons may remain in school and should be instructed to practice good hand and personal hygiene. Infected persons should be excluded from athletic activities if wound coverings are not likely to be maintained during those activities.

Maintaining a clean environment

- Showers, locker rooms, weight rooms, mats, benches, sports equipment and other commonly used items and areas should be routinely cleaned and disinfected with EPA registered disinfectants or diluted bleach solution (see guidance for use of bleach disinfection below). Follow all directions on product label and allow disinfectants to remain on items for the amount of time recommended by the manufacturer. A list of appropriate disinfectants is located on the EPA website at <http://www.epa.gov/oppad001/chemregindex.htm>. Selection of disinfectant for use on sports equipment that could potentially be damaged by certain disinfectants should be based on equipment manufacturer recommendations.
- Whirlpools should be drained and disinfected routinely, paying special attention to cleaning of the jet devices.
- Whirlpools should not be used by persons with open wounds or active skin infections.
- Used bandages and dressings that are heavily soiled or saturated with blood or wound drainage should be sealed in a plastic bag before discarding into regular trash containers.
- Uniforms, towels, and other laundry should be washed routinely in hot water and detergent or warm water and bleach and dried thoroughly in a hot dryer.
- Liquid soap dispensers are recommended in place of soap bars for use in common areas such as rest rooms and locker rooms. Soap dispensers should contain bottles or bags that are replaced when empty to avoid addition of soap to used containers.

Management of outbreaks

An outbreak is defined as three or more cases of skin infections among close contacts (e.g. students from the same classroom, athletes on the same sports team, or athletes sharing the same facilities) in which

CA MRSA has been isolated from a culture of the infected area.

- Contact the local health department for technical assistance on management of the outbreak.
- Screen students and staff, especially close contacts of cases, for signs and symptoms of skin infections. Refer persons with signs and symptoms of infection for medical treatment and evaluate the need for them to be excluded from school or sports activities.
- Be prepared to distribute informational material to students, staff, and parents regarding strategies to control transmission of CA MRSA.

Guidance for Use of Bleach Disinfectant

Bleach is a good general disinfectant that is effective against many bacteria and viruses and may be used to clean and disinfect a variety of items and surfaces. It is important, however, to keep in mind the following characteristics of bleach solution when using as a disinfectant:

- Bleach is inactivated when it comes in contact with organic material such as dirt, blood, and other body fluids. These materials must either be removed first before bleach is applied, or a higher concentration of bleach solution (1:10 dilution) should be used to disinfect surfaces contaminated with organic material.
- Bleach must not be used with ammonia-containing compounds that are found in household cleaners, detergents, and disinfectants. The combination of chlorine and ammonia creates chloramine gas, which is hazardous to humans.
- Bleach can potentially damage or discolor fabrics and synthetic materials such as carpet and upholstery, especially at high concentrations (1:10 dilution).
- Bleach can also damage metal items. Concentrations of bleach stronger than the 1:100 dilution recommended for nonporous surfaces are corrosive to most metals.

Instructions for use of household bleach (5.25% sodium hypochlorite) as a disinfectant

1. 1:10 dilution:

- Use on wood, cloth, concrete, and other porous surfaces that cannot be effectively pre-cleaned to remove organic material. This high concentration of bleach solution may be corrosive for many surfaces and items and should be used only when organic material cannot be removed prior to disinfection.
- Mix 1 part bleach and 9 parts water (example: 1 cup bleach plus 9 cups water).
- Thoroughly moisten surfaces or items with bleach solution until they are visibly wet and allow to air dry.
- Store the bleach solution in an opaque plastic container at room temperature. Do not store in glass. Solution may be used for up to 30 days after preparation.

2. 1:100 dilution:

- Use on smooth, pre-cleaned surfaces such as glass, plastic, and metal.
- Add ¼ cup of bleach to one gallon of water.
- Remove organic material with detergent and water and let dry.
- Thoroughly moisten surfaces or items with bleach solution until they are visibly wet and allow to air dry.
- Bleach solutions at this level of dilution must be made up daily to maintain effective chlorine levels.

Reference: Rutala WA, Cole EC, Thomann CA, Weber DJ. Stability and bactericidal activity of chlorine solutions. *Infect Control Hosp Epidemiol* 1998; 19: 323-27.