



Community-Associated Methicillin Staphylococcus in Schools

CA-MRSA

Perhaps you are just hearing about Community-Associated (or Acquired) Methicillin Resistant Staphylococcus Aureus (**CA-MRSA**) outbreaks in schools. CA-MRSA is alarming; it has struck—and on rare occasions killed—young, healthy children and adults. Fortunately, we can control CA-MRSA exposures at school by introducing good practices (primarily frequent hand-washing and covering open sores), and early identification and treatment of children and adults at risk.

Staphylococcus aureus, often referred to as “staph,” is a bacteria commonly found on the skin or in the nose of healthy people. Approximately 25 percent to 30 percent of us are colonized with staph bacteria and carry the bacteria without becoming ill; 1 percent may carry antibiotic-resistant strains or MRSA without becoming ill. Sometimes, staph causes a minor skin infection (pimple, pustule, or boil) that can be treated conservatively, without antibiotics.

CA-MRSA: Where Did it Come From?

MRSA is not new. In fact, healthcare- or hospital-associated (HA) MRSA first appeared in the 1960s. Over the past years, treatment of some staph infections has become more difficult because bacteria have become resistant to various antibiotics.

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Susceptible hospital patients and nursing home residents at times acquire infections from the resistant strains. They often have weakened immune systems, chronic conditions or antibiotic treatments that make them especially vulnerable. In fact, a recent CDC report that attributed 19,000 deaths a year to MRSA found that most victims were hospital patients and/or frail elderly people. HA-MRSA is highly resistant to many antibiotics and infection control specialists at hospitals work mightily to limit its spread.

Public health experts identified Community-Associated Methicillin Resistant Staphylococcus Aureus (CA-MRSA) infections in the 1990s. It emerged in persons having none of the risk factors associated with HA-MRSA in the past. CA-MRSA is caused by strains of staphylococcus aureus different from those associated with HA-MRSA. Public health experts have tracked some CA-MRSA outbreaks in children to crowded homes with unsanitary conditions. There have also been outbreaks in prisons.

Comparison: Healthcare-Associated MRSA and Community-Associated MRSA

	HA-MRSA	CA-MRSA
Hospital/healthcare facility	Yes	No
Mean age of infection	Older	Younger
Skin and soft tissue infections	35 percent	75 percent
Antibiotic resistant	Many agents	Some agents

CA-MRSA—What To Look For

The most frequent infections caused by CA-MRSA are skin and soft-tissue infections that may appear as boils or abscesses. Early lesions often appear as **spider bites**. Less commonly, CA-MRSA can escape into the bloodstream and infect and attack lungs (causing pneumonia) and other major organs.

CA-MRSA can be transmitted from person to person through close contact. Risk factors associated with the spread of MRSA include direct skin-to-skin contact with colonized or infected persons (non-intact skin serves as a point of entry for the bacteria), sharing contaminated personal items (e.g., body towels, razors, soap, clothing), poor personal hygiene, direct contact with contaminated environmental surfaces, and living in crowded settings.

Outbreaks of CA-MRSA in schools have increased over the years among athletes in contact sports (e.g., football, wrestling).

CA-MRSA Treatment

When physicians suspect MRSA after taking a history and examining a boil or lesion, they may first try to treat the lesion with a topical antibiotic cream/ointment such as 2 percent mupirocin or bacitracin. At times, they may consider giving a systemic antibiotic after testing the MRSA for “sensitivity” to antibiotics.

Controlling MRSA at School

The best approach to controlling MRSA at school is to have an active policy and practice in place. Too often the response to an outbreak has been panic. Disinfection of locker rooms and equipment is fine, but standard hygiene and routine cleaning may be enough in the long run to control MRSA.

Staff and students need as much encouragement and reminding as possible to wash their hands frequently and thoroughly. Hand-washing can be one of the most effective methods to control exposure to MRSA bacteria.

Staff and students should also be instructed to cover all lesions, cuts and sores while at school.

A good policy should be written and reviewed on a regular basis. The policy may include other infectious diseases, including blood-borne pathogens. Some elements of a policy include:

- **Rapid identification and evaluation of students with painful skin lesions or “bug bites.”** Students should be encouraged to report these lesions and staff should direct them to the school nurse immediately for assessment. The nurse should also evaluate unusual skin lesions or other draining wounds.
- **Active surveillance of contact sports athletes.** Coaches and physical education teachers should work with the school nurse to actively monitor athletes for skin infections (active surveillance). Coaches and/or athletic trainers should be encouraged to assess student athletes for any unusual skin lesions before practice or competition.
- **Athletes with skin infections should be referred to their personal physician.** When MRSA infection is suspected, athletes should be referred to their primary care provider for evaluation and treatment. Following the medical evaluation, the student or parent should be asked to provide verification of the healthcare provider’s treatment plan. Those infected with MRSA should follow their healthcare provider’s treatment plan, including completing antibiotic therapy, if an antibiotic was prescribed.

- **Contact investigation.** If MRSA is diagnosed, the school nurse or designated policy coordinator should interview the student (parent/guardian for young children) to investigate the possibility of other cases among their friends, roommates, teammates, and/or family members. They may be at risk of a MRSA infection and should be given support and advice to seek treatment.
- **Exposure control.** A student with a draining skin lesion could transmit potentially infectious agents to others. When a student with a suspect or confirmed MRSA skin infection is in the classroom, the following infection control measures should be in place :
 1. Keep the wound covered. All skin infections, particularly those that produce pus must be covered with a clean, dry bandage to contain the drainage. Students that participate in contact sports or other contact activities should ensure that the wound dressing stays intact during the anticipated activity. Contaminated dressings and other materials associated with the infected lesion should be placed in a plastic bag before discarding, as appropriate.
 2. Practice good basic hygiene. The school should promote and reward good basic hygiene for everyone in the school. Everyone, but especially infected students, should be diligent with hand hygiene. Schools need to ensure availability of adequate soap and hot water. If this approach is not practical, students and staff should be encouraged to use an alcohol-based waterless hand sanitizer immediately after contact. It may be challenging but students should be encouraged to practice good hygiene overall, including showering and washing with soap on a regular basis but especially after all practices and competitions, before using the gymnasium, or immersing in a whirlpool, hot tub, or swimming pool.
 3. Prohibit students from sharing personal items. Instruct students and athletes to avoid sharing personal hygiene supplies and other items such as athletic clothing, towels, uniforms, skin balms, skin lubricants, razors, and certain sports equipment at all times. It is particularly important to avoid sharing personal items that may have been in contact with the infected wound or bandage.
 4. Clean environmental surfaces. Even when the MRSA outbreak or scare is over, schools should practice routine surface cleaning of shared athletic equipment and environmental surfaces. Athletic equipment that has been in contact with potentially infectious wound drainage, blood, or non-intact skin should be disinfected with an EPA-registered disinfectant cleaner that meets the requirements of the Blood-borne Pathogens Standard developed by the Occupational Safety and Health Administration (OSHA). Athletic equipment that is in contact with intact skin or not normally in contact with individuals (e.g., wrestling mats) can be cleaned with an intermediate (e.g., ready-to-use tuberculocidal solution) or low-level disinfectant (e.g., quaternary ammonium solution).

Never use concentrated bleach or other toxic disinfectants you: could be exposing staff and students to hazardous exposures in your pursuit of disinfection.

Parent, Student, Staff Education

A policy is only effective if all concerned are trained in the school district's policy and practices. Refreshers help keep good practices alive; the training can be incorporated into the annual blood-borne pathogen training (required by OSHA state-plan states) or other health and safety programs.

For more information on CA-MRSA, consult the following Web-sites:

The Centers for Disease Control and Prevention: Questions and Answers about MRSA in Schools:

<http://www.cdc.gov/Features/MRSAinSchools>

Tacoma/Pierce County: MRSA Toolkit for School Custodians

<http://www.tpchd.org/page.php?id=386>

Tacoma/Pierce County: MRSA Toolkit for Athletic Departments

<http://www.tpchd.org/page.php?id=365>

Commonwealth of Massachusetts, Dept. of Public Health: Questions and Answers about MRSA for School Health Professionals:

http://www.mass.gov/dph/cdc/antibiotic/mrsa_school_health.htm#2

Still more questions? Contact Darryl Alexander (dalexand@aft.org) or Michael Lohman (mlohman@aft.org) at AFT Health and Safety, 800-238-1133 extension 5674 or 4365.