



THE STATE EDUCATION DEPARTMENT
THE UNIVERSITY OF THE STATE OF NEW YORK

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To: District Superintendents, Superintendents of Schools, and Administrators of Charter and Nonpublic Schools

From: New York State Department of Health, Bureau of Communicable Disease Control, Regional Epidemiology Program and New York State Education Department

**HEALTH ADVISORY: PREVENTION OF METHICILLIN-RESISTANT
STAPHYLOCOCCUS AUREUS (MRSA) INFECTIONS IN THE SCHOOL SETTING**

**Please distribute to the School Health Office,
Athletics Department, and Custodial Department**

Note: this advisory was originally issued on October 25, 2007. Several updates have been made to the advisory; the updated sections are indicated by underlined text.

The New York State Department of Health and the New York State Education Department are jointly providing this advisory to assist schools in the prevention of MRSA infections in the school setting. This advisory summarizes some of the key points on:

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1. Background

- In New York State and elsewhere throughout the country, reporting of MRSA infections is becoming more common in community settings, including schools.
- MRSA infections in schools can cause anxiety for parents and school staff. This document is intended to provide information about MRSA infections in the school setting and how to prevent and control them.
- *Staphylococcus aureus*, commonly referred to as “staph,” are bacteria commonly carried on the skin or in the nose of healthy people.
 - Approximately 25% to 30% of the population carry staph bacteria on their skin and in their noses without causing infection (also known as colonization).
 - Infections can start when staph bacteria get into a cut, scrape or other break in the skin. Staph bacteria are one of the most common causes of skin infections in the U.S.
 - Most of these skin infections are minor (such as pimples and boils) and can be easily treated without antibiotics.
 - Staph bacteria can also cause more serious infections, such as blood stream infections and pneumonia, which require more aggressive treatment.
 - Some staph bacteria are resistant to antibiotics. MRSA is a type of staph that is resistant to a certain class of antibiotics. There are numerous other antibiotics to treat MRSA infection when necessary.
 - Antibiotic resistance in general is related to inappropriate use of antibiotics such as over prescribing and failure to finish prescribed courses of antibiotics. Such inappropriate use favors the spread of antibiotic resistant organisms.

2. Symptoms of MRSA

- Colonization with MRSA is similar to being colonized with other naturally-occurring bacteria and refers to the asymptomatic carriage of MRSA on the skin or in the nose.
- Most people with MRSA on their skin or in their nose are unaware they are colonized, and never develop a MRSA infection.
- When MRSA enters a break in the skin, it can cause infections that may look like a pimple or boil and can be red, swollen, painful, or have pus or other drainage.
- More serious MRSA infections include pneumonia, blood stream infections, or severe skin or wound infections.

3. Transmission Routes of MRSA

- MRSA is transmitted most frequently by direct skin-to-skin contact.
- MRSA can also be transmitted by:
 - Contact with drainage from infected scrapes, cuts, or other skin wounds.
 - Contact with personal items contaminated with drainage from infected scrapes, cuts, or other skin wounds. These items can include contaminated bandages, towels, washcloths, soap, razors, topical preparations*, athletic or gym equipment, and uniforms or other clothing.
- Risk of transmission is low from environmental surfaces that are not contaminated by skin wounds or frequent direct skin contact.

* ointments, balms, lotions, deodorants, antibiotic creams

- Common sense approaches to keeping surfaces clean, such as cleaning them when they become soiled, will reduce the levels of all bacteria on environmental surfaces. See section 7 for detailed guidance regarding environmental cleaning and disinfection.
- The use of microfiber mops has shown improved reduction of environmental bacteria levels compared to conventional loop mops, and can also substantially reduce the use of chemicals for routine cleaning.

4. Treatment of MRSA

- Persons colonized with MRSA do not need to be treated. Transmission to others can be prevented by good hygiene including frequent hand washing.
- Most MRSA infections are treated by good wound and skin care:
 - Keep the area clean and dry.
 - Perform hand hygiene before and after caring for the area. Alcohol-based hand sanitizers should be used if soap and water is not available. Consult with the school medical director for guidance regarding the use of alcohol-based sanitizers with small children. Ensure proper supervision of children using these sanitizers.
 - Carefully dispose of any bandages.
- Sometimes treatment requires the use of antibiotics:
 - Antibiotics should be used at the discretion of a healthcare provider.
 - If antibiotics are needed, it is important for the patient to use the medication exactly as directed, including taking the complete prescribed course even if he/she is feeling better before the medication is used up.
 - If the infection has not improved within a few days, the student's healthcare provider should be contacted for evaluation.

5. Prevention of MRSA in Schools

- Schools should provide ready access to sinks, soaps, and clean paper towels.
- Staph and MRSA infections in schools can be prevented if staff and students follow basic hygiene measures:
 - Keep hands clean by washing thoroughly with soap (preferably not bar soap) and water or with an alcohol-based hand sanitizer if hands are not visibly soiled. Consultation with the school district medical director and proper supervision are needed when using alcohol-based hand sanitizers with children.
 - Practice good skin care. Since staph infections start when staph enters the body through a break in the skin, keeping skin healthy and intact is an important preventive measure.
 - Wash any cut or break in the skin with soap and water and apply a clean bandage until healed.
 - Avoid contact with other people's wounds or bandages. If it is necessary for a staff member to assist with a student's bandage, that staff member should do so under the direction/advisement of the school health personnel. They should wear gloves, place the used bandage in the trash, and wash their hands and forearms immediately after removing gloves. (Use standard barrier precautions when exposed to body fluids.)
 - Avoid sharing personal items such as cloth towels.

- Students or staff with symptoms of MRSA should contact a healthcare provider and do the following:
 - Keep wounds clean and covered with a bandage until healed. Change bandages as recommended by the healthcare provider or when soiled. Discard promptly used bandages or tape in the regular trash.
 - Wash hands and forearms before and after caring for wounds and throughout the day. Wash for at least 20 seconds using soap (preferably not bar soap) and warm water and dry your hands on a clean paper towel.
 - Do not share personal items such as towels, washcloths, soap, razors, topical preparations, uniforms, or clothing that may have had contact with an infected wound or bandage.
 - Wash towels, washcloths, uniforms or clothes that become soiled with hot water and laundry detergent. Drying clothes in a hot dryer, rather than air-drying, also helps kill bacteria in clothes.
 - Take all antibiotics as prescribed and for the full length of time prescribed.
 - Report new skin sores or boils to a healthcare provider.
- The risk of transmitting MRSA in the classroom is low.
- School attendance:
 - Unless directed by a physician, students with MRSA infections should not be excluded from attending school. According to NYSED Commissioner's Regulations [8 NYCRR 136.3 (h)], schools may only exclude those students with communicable diseases which are reportable under Public Health Law. A list of such diseases may be found at 10 NYCRR.2.1. Individual cases of MRSA infection are not reportable in New York State.
 - Students with any open or draining wounds, such as MRSA infections, should be excluded from swimming pools, whirlpools, hot tubs, etc. until the wound has healed.
- Parent/staff notification:
 - Typically, it is not necessary to inform the entire school community about a single MRSA infection. Schools should take care to maintain the student's right to privacy with this or any health issue.
 - When an outbreak or an increase in MRSA infections occurs within the school population, or if transmission within a school is identified, the school should contact the local health department (LHD).
 - Parent and staff notification should be based on consultation with LHD to the appropriate school administrators, according to the established school board policy.
- Considerations for students with immune suppression or HIV infection:
 - Students with weakened immune systems may be at risk for more severe illness if they get infected with MRSA.
 - These students should follow the same prevention measures as all others to prevent staph infections and should contact their healthcare provider with any specific concerns. Schools should take care to maintain the student's right to privacy and confidentiality with this or any health issue.
- Reporting requirements for MRSA infection:
 - Clusters of MRSA infection are reportable to the LHD.

- Environmental cleaning:
 - See section 7 for detailed guidance regarding environmental cleaning and disinfection.

6. Prevention Measures for MRSA in the School Athletics Setting

• Hygiene and Infection Control Practices

- Hand hygiene is the single most important factor in preventing the spread of MRSA.
- Coaches and trainers should practice appropriate hand hygiene (use alcohol-based hand sanitizer or wash with soap and water) after contact with players, especially when changing bandages and providing care for wounds. Consult with the school medical director regarding the use of alcohol-based hand sanitizer and provide appropriate student supervision.
- Persons other than school health personnel may assist a student with the application of clean dressings following initial approval and assessment by appropriate authorized school health staff. Such persons should wear disposable gloves, and wash their hands and forearms immediately after removing gloves using barrier precautions at all times.
- In situations where access to sinks is limited (e.g., on playing fields), carry individual containers of alcohol-based hand sanitizer. (See note above regarding the use of alcohol-based sanitizer and appropriate supervision.)
- Provide enough clean towels so players do not need to share them.
- Educate players on appropriate management of all wounds.
- Exclude players with draining lesions or open wounds (whether or not they are covered) from swimming pools, whirlpools, ice tubs, saunas and hot tubs. All excluded students should comply with their district's standard clearance process for returning to sports and physical education class.
- All wounds (e.g., cuts, scrapes, abrasions) should be covered with a bandage until healed, especially when contact with multi-use items (i.e., weight equipment, electric stimulation cuffs) may occur.
- Wounds (e.g., cuts, scrapes, abrasions) should be completely and securely covered during competition (e.g., bandaged and use of protective sleeve).
- Students with active skin and soft tissue infection (e.g., draining wounds, boils, abscesses) should not participate in activities where skin-to-skin contact is likely to occur until their infections are completely healed.
- Specific guidance for players:
 - Do not share towels (even on the sidelines of games), washcloths, soap, razors, topical preparations, or other personal hygiene items with other players.
 - Shower *with soap* (preferably not bar soap) before using the whirlpool, steam room, or sauna.
 - Shower as soon as possible after EVERY practice, game, or tournament.
 - Shower before and after sports with extensive skin-to-skin contact (e.g., wrestling, football).
 - Avoid contact with draining lesions and contaminated items (e.g., bandages) from other people.

- Perform hand hygiene after using multi-use equipment (e.g., weight equipment) and after contact with potentially contaminated items (e.g., another person's wounds, infected skin, or soiled bandages).
 - Follow good hygienic practices—hand hygiene, showering, and regularly laundering clothes.
 - **Environmental Surfaces and Equipment**
 - See section 7 for detailed guidance regarding environmental cleaning and disinfection.
 - **Disease Surveillance**
 - MRSA infections can spread quickly on athletic teams and can be difficult to control.
 - It is important for coaches and trainers to be aware of every skin infection as soon as it occurs to prevent a single case from becoming an outbreak. School employees should consult with the school's health professional(s) as needed for information and assessment as appropriate.
 - If MRSA infections occur among team members, associated students and staff should be encouraged to report skin changes such as redness, warmth, swelling, tenderness, or drainage, especially when associated with cuts, boils, or sites of skin irritation and abrasions. Coaches and staff observing open or undressed skin lesions on team members should direct the student to a healthcare provider to have the lesion evaluated.
 - If MRSA infections occur among players on children's sports teams, appropriate school officials based on school board policy should consider notifying parents of all team members to enlist their support with reinforcing hygiene measures and reporting of skin lesions to team officials.
 - Care must be taken to maintain confidentiality of players with infected wounds to avoid stigmatization and anxiety.
 - **Diagnosis and Treatment**
 - Players with skin lesions should be referred to a healthcare provider.
 - See Section 4 for additional guidance with respect to treatment of MRSA infections.
 - **Player Exclusion from Participation**
 - Individuals with open wounds (e.g., cuts, scrapes, abrasions) need not be excluded if the wounds can be completely and securely covered with clean, dry bandages.
 - Athletes with active skin and soft tissue infection (e.g., draining wounds, boils, abscesses) should not participate in activities where skin-to-skin contact is likely to occur until their infections are completely healed. Follow the district process of clearance for students to return to sports and physical education classes.
- 7. Environmental Cleaning and Disinfection in the School and School Athletics Settings**
- **Control Measures as Part of Routine Building and Vehicle Maintenance:**
 - If confirmed MRSA cases in the school population have not been identified, follow routine, common sense procedures for cleaning school environments, (e.g., classrooms, lunchrooms, time out rooms) and school buses.

- o Follow New York State Office of General Services (OGS) school green cleaning guidance for school environments and school bus cleaning using OGS-approved green-cleaning products. Details are available on the OGS web site: <http://www.ogs.state.ny.us/bldgadmin/environmental/default.html>.
- o Follow regular cleaning and maintenance procedures for equipment and materials that may be shared in the classroom such as protective eyewear or clothing.
- o Use of disinfectants (see description, below) on shared environmental surfaces and equipment as part of regular facility maintenance may also be considered.
 - Most disinfectant products require proper cleaning of surfaces prior to applying disinfectant. Proper cleaning reduces levels of bacteria on environmental surfaces.
- o Clean and disinfect health room cots regularly (at least daily), and use pillow protectors.
- o Time out rooms should be inspected immediately after each use and cleaned and disinfected as needed.
 - Particular attention should be given to cleaning high touch surfaces.
 - Any body fluids or secretions should be cleaned and disinfected immediately, following the school's Exposure Control Plan and SED infection control guidance for blood-borne pathogens. Keep students away from the area and cover with paper towels until the area is cleaned and disinfected. Call appropriate personnel for clean-up (e.g., designated custodial staff).
- o If soiled linens and clothing are washed on school premises, wash with laundry detergent in hot water (minimum 160°F), add one cup of bleach if water is not 160°F and dry in a hot dryer. Consider wearing gloves when handling dirty laundry.
- **If MRSA infection is confirmed in the school population:**
 - o Disinfect limited areas, such as surfaces that are likely to be in contact with uncovered or poorly covered infections, using a NYS registered product effective against MRSA.
 - Environmental surfaces in the classroom(s) and shared equipment where direct-skin contact by multiple users is likely (e.g., desks, counter-tops).
 - Environmental surfaces, including walls, carpets, and floors, in time out rooms after use by an individual with MRSA infection.
 - Seats in the school bus of the individual with MRSA infection.
 - o Widespread disinfection of entire buildings or vehicle fleets based on the occurrence of a single MRSA infection is not recommended.
- **Considerations for use of registered disinfectant or sanitizer products:**
 - o Disinfectants are pesticide products regulated by the U.S. Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (DEC).
 - Products that are registered in New York State as effective against MRSA can be found at:
www.nyhealth.gov/diseases/communicable/staphylococcus_aureus/methicillin_resistant/control/.
Because the registration status of products can change, please verify NYS product registration by checking the Cornell New York State Pesticide

Product, Ingredient, and Manufacturer System (PIMS) website at:
<http://magritte.psur.cornell.edu/pims/>.

- Routine use of disinfectants is not without risk.
 - Many of the active ingredients in disinfectant products can burn or irritate the skin and eyes, and, in some cases, can cause respiratory irritation.
 - Take precautions to reduce exposure to applied disinfectants to the extent practical, and follow all label directions and precautions.
- The school green cleaning guidelines pertain to cleaning products.
 - Disinfectant products, which are regulated as pesticides, are not specifically addressed.
 - OGS green cleaning guidance recognizes that existing laws, regulations and professional guidance regarding cleaning, maintenance and disinfection practices may apply in certain circumstances and these are not superseded by the school green cleaning guidelines.
- In some cases, school athletic facilities may require special cleaning and maintenance practices.
 - If disinfectant use is deemed desirable in a setting such as for shared athletic equipment or locker-room facilities, that use is not precluded by the school green-cleaning guidelines.
 - However, personnel should be trained in proper disinfectant use, and label directions must be followed.
- **Cleaning and Disinfection of Environmental Surfaces and Equipment in the School Athletics Setting:**
 - A regular cleaning schedule should be established for shared environmental surfaces such as wrestling mats or strength-training equipment.
 - Sanitize all skin-contact points of weight equipment at a minimum once per day.
 - Sanitize mats and other high-use equipment before each practice and several times a day throughout a tournament.
 - Use a clean towel as a barrier between bare skin and shared surfaces (e.g., exercise equipment, sauna bench, leg supports during therapy).
 - Use of clean barriers between bare skin and shared surfaces reduces the need for frequent sanitizer application.
 - Encourage athletes to sanitize all shared surfaces that come in contact with bare skin (e.g., mats, massage tables, training tables, and therapy machines) between each use.
 - Cover treatment tables. Discard or launder coverings after each use.
 - Repair or discard equipment with damaged surfaces that cannot be adequately cleaned (e.g., equipment with exposed foam).
 - If soiled linens and clothing are washed on school premises, wash with regular laundry detergent in hot water (minimum 160°F), add one cup of bleach if water is not 160°F and dry in a hot dryer. Consider wearing gloves when handling dirty laundry.
 - Consider regular sanitizing or disinfection of shared surfaces and equipment that come into contact with bare skin.

- Use a sanitizer or disinfectant registered for use against MRSA on surfaces, or use a freshly-mixed solution of one part bleach to 100 parts water (1 tablespoon bleach to 1 quart of water).
- Follow the directions listed on the labels of all cleaning/disinfecting products with particular attention to the contact times for any sanitizing/disinfectant solution.
- Disinfection of artificial playing surfaces (e.g., artificial turf) is not recommended.
 - Artificial turf has been reported to be associated with an increased risk factor for MRSA infection, not because it is a reservoir for MRSA, but because skin abrasions are more common from falling and sliding on artificial turf ("turf burns") than from similar falls on natural turf. Turf burns provide a portal of entry for the bacterium.
 - Sunlight and weather reduce survival of bacteria on outdoor artificial turf.
 - An investigation of cases among a professional football team specifically failed to isolate MRSA bacteria from environmental surfaces, including artificial turf.

8. Additional Information

Additional information about MRSA can be found on the web at the following sites:

- New York State Department of Health:

http://www.health.state.ny.us/diseases/communicable/staphylococcus_aureus/methicillin_resistant/community_associated/

- Centers for Disease Control and Prevention (CDC)

Overview of Community-Associated MRSA:

http://www.cdc.gov/ncidod/dhqp/ar_mrsa_ca.html

- CDC Questions and Answers about MRSA in Schools:

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

- CDC MRSA educational materials and posters:

http://www.cdc.gov/ncidod/dhqp/ar_mrsa_ca_posters.html

- CDC National MRSA Education Initiative:

http://www.cdc.gov/mrsa/mrsa_initiative/skin_infection/index.html

- New York Statewide School Health Services Center

<http://www.schoolhealthservicesny.com>