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**TO:** Camp Operators, Camp Directors and Camp Health Directors, Local Health Departments

**FROM:** NYSDOH Bureau of Communicable Disease Control  
NYSDOH Bureau of Community Environmental Health and Food Protection

**Health Advisory: Prevention and Control of Methicillin-resistant *Staphylococcus aureus* (MRSA) Infections in the Camp Setting**

**Please distribute immediately to children’s camp operators, camp directors, and camp medical health directors.**

*Note: This advisory was originally posted on the New York State Department of Health’s Health Alert Network (HAN) on March 27, 2008. Two updates have been made to the advisory; the changes are indicated by underlined text on pages 1 and 4.*

The New York State Department of Health is providing this advisory to assist children’s camp operators, directors, and health directors in the prevention and control of MRSA infections in the camp 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 such as schools and athletic teams.

- MRSA infections in children’s camps can cause anxiety for campers, camp staff, and parents. This document is intended to provide information about MRSA infections in the camp 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 staph or 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 staph or 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 staph or 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.

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\* ointments, balms, lotions, deodorants, antibiotic creams

- Risk of transmission is low from environmental surfaces that are not contaminated by skin wounds or frequent direct skin contact.
  - 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**

- In general, 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. Exercise caution and ensure proper supervision of young children using alcohol-based sanitizers.
  - Carefully dispose of any used bandages.
- Sometimes treatment involves 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, camp medical staff should consider outside consultation and referral for evaluation and management.

#### **5. Prevention of MRSA in the Camp Setting**

- Hand hygiene is the single most important factor in preventing the spread of MRSA.
- The risk of transmitting MRSA in most social settings is low.
  - The risk among those sharing a cabin, athletic equipment, or clothing, as is common at camps, is likely increased.
- Children’s camps should provide ready access to sinks, soaps, and clean paper towels throughout camp grounds, including cabins, dining areas, and other areas of common gathering.
  - In situations where access to sinks is limited (e.g., during hikes, outings, athletic events), camp staff should carry a container of alcohol-based hand sanitizer. Alcohol-based hand sanitizer should be use in accordance with the manufacturer’s recommendations. Camp staff should check for known allergies to products prior to use on any camper or staff.
- Staph and MRSA infections in camps can be prevented if staff and campers 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 and soap

- and water is not available). Follow recommendations above regarding use of alcohol-based hand sanitizers.
- 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 camper's bandage, that staff member should do so under the direction/advisement of the camp medical staff. 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.
  - Campers or staff with symptoms of staph or MRSA infection should immediately notify camp medical staff 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.
    - Take all antibiotics as prescribed and for the full length of time prescribed.
    - Campers with skin lesions should be referred to the infirmary for evaluation.
    - Report new skin sores or boils to camp staff and/or medical personnel immediately.
  - Camp attendance for campers and staff with staph or MRSA skin infections
    - Campers whose wounds can be covered and contained with a clean, dry bandage and can maintain good personal hygiene do not need to be excluded from camp or camp activities.
    - No exclusion is necessary from general activities.
    - Campers and staff with active staph or MRSA infections should be excluded from food preparation until symptoms have resolved and the local health officer determines that the risk of transmitting MRSA has been eliminated.
    - Campers with any open or draining wounds, including MRSA infections, should be excluded from all swimming and water activities.
    - Students with active skin infections (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.
    - Report new skin sores or boils to camp staff and/or medical personnel immediately.
  - Notification
    - All members of the camp community should be aware of the risks of MRSA and to notify camp medical staff of any evidence of MRSA infection.
    - Camps should take care to maintain campers' and staff members' right to privacy and confidentiality with this or any health issue.

- Typically, it is not necessary to inform the entire camp community about a single MRSA infection.
- Notification of the camp community and parents should be based on consultation with the NYSDOH and LHD, according to the established camp policy.
- Considerations for campers with immune suppression or HIV infection
  - Campers with weakened immune systems may be at risk for more severe illness if they get infected with MRSA.
  - These campers should follow the same prevention measures as all others to prevent staph infections and should contact their personal healthcare provider with any specific concerns. Camps should take care to maintain the camper's right to privacy and confidentiality with this or any health issue.
- Reporting requirements for MRSA infection
  - As per 10NYCCR 7-2.8(d), all camper and staff illnesses suspected of being spread by contact shall be reported within 24 hours to the Local Health Department (LHD).
  - If transmission within a camp is identified, or an outbreak or an increase in MRSA infections occurs within a camp population, the camp should contact the LHD.
- Environmental cleaning, surfaces, and disinfection
  - See section 7 for detailed guidance regarding environmental cleaning and disinfection.
- Disease surveillance
  - It is important for camp staff to be vigilant for skin infections among campers.
  - To prevent a single case from becoming an outbreak, campers and camp staff should report any suspected infection immediately to camp medical staff.
  - Campers and staff should be encouraged to report any skin changes such as redness, warmth, swelling, tenderness, or drainage, especially when associated with cuts, boils, or sites of skin irritation and abrasions.
  - Staff observing open or undressed skin lesions on campers should direct the camper to the camp infirmary to have the lesion evaluated.
- Camp infirmary considerations
  - Camp proprietors should ensure infirmary staff are familiar with the signs and symptoms of MRSA infection, basic management of MRSA infections, and current recommendations for prevention and control of MRSA.
  - Camp infirmaries should have ample supplies of occlusive bandages, tape, and antimicrobial ointment.
  - A facility where persons can be referred for evaluation and treatment should be identified before camp begins. Camp medical staff may also want to identify an infectious disease consultant if the need for consultation arises during camp.
  - Camp infirmaries with adequate facilities may want to stock equipment to perform simple incision and drainage, such as disposable scalpels, betadine, gauze, and suturing materials.
  - An excellent poster entitled 'Outpatient management of skin and soft tissue infections in the era of community- associated MRSA' is available at no charge from CDC. Camp infirmaries should consider reviewing and posting the information in their facilities. The poster can be downloaded at [http://www.cdc.gov/ncidod/dhqp/ar\\_mrsa\\_ca\\_skin.html](http://www.cdc.gov/ncidod/dhqp/ar_mrsa_ca_skin.html)

## 6. MRSA Prevention and Camp Athletics

- Hygiene and infection control practices
  - Hand hygiene is the single most important factor in preventing the spread of MRSA.
  - Camp staff, coaches, and trainers should practice appropriate hand hygiene after contact with players, especially when changing bandages and providing wound care.
  - When assisting a camper or staff with application or changing of dressings, gloves should be worn and hands must be washed immediately after removing gloves.
  - In situations where access to sinks is limited, carry individual containers of alcohol-based sanitizer. For recommendations on use of alcohol-based hand sanitizers, please refer to Section 5.
  - Provide enough clean towels so players do not need to share them.
  - Educate players on appropriate management of all wounds.
  - Wounds (e.g., cuts, scrapes, abrasions) should be completely and securely covered at all times, particularly during competition (e.g., bandaged and use of protective sleeve).
  - Specific guidance for players:
    - Do not share towels (even on the sidelines during games), washcloths, soap, razors, topical preparations, or other personal hygiene items with other players.
    - Shower *with soap* as soon as possible after EVERY practice or game.
    - 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).

## 7. Environmental Cleaning and Disinfection in the Camp and Athletic Settings

- Control measures as part of routine building and vehicle maintenance
  - If confirmed MRSA cases in the camp population have not been identified, follow routine, common sense procedures for cleaning the camp.
  - Follow regular cleaning and maintenance procedures for equipment and materials that may be shared such as protective eyewear or clothing.
  - 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.
  - When laundering soiled linens, 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.
  - Clean and disinfect infirmery cots regularly (at least daily), and use pillow protectors.
- If MRSA infection is confirmed in the camp population
  - 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 (see next section immediately below).

- Environmental surfaces and shared equipment where direct-skin contact by multiple users is likely include sports equipment, outdoor equipment, exercise equipment, horseback riding saddles, etc.
- Widespread disinfection of entire facility based on the occurrence of a single MRSA infection is not recommended.
- Considerations for use of registered disinfectant or sanitizer products
  - Disinfectants are pesticide products regulated by the U.S. Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (DEC).
    - A list of disinfectant products that are registered in New York State as effective against MRSA is available on the New York State Department of Health website at:  
[http://www.health.state.ny.us/diseases/communicable/staphylococcus\\_aureus/methicillin\\_resistant/control/](http://www.health.state.ny.us/diseases/communicable/staphylococcus_aureus/methicillin_resistant/control/)
    - Since the registration status of products is subject to change, please verify New York State 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.

## 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/](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](http://www.cdc.gov/ncidod/dhqp/ar_mrsa_ca.html)

CDC MRSA educational materials and posters

[http://www.cdc.gov/ncidod/dhqp/ar\\_mrsa\\_ca\\_posters.html](http://www.cdc.gov/ncidod/dhqp/ar_mrsa_ca_posters.html)

- Cornell New York State Pesticide Product, Ingredient, and Manufacturer System (PIMS)

<http://magritte.psur.cornell.edu/pims>