

## Community-Associated Methicillin-Resistant *Staphylococcus aureus* (MRSA) Skin Infections in San Luis Obispo County

*Staphylococcus aureus* is a common etiologic organism in soft tissue infections throughout the world, and may be found on normal skin in nearly 20% of healthy people. Over the past several decades nosocomial infections with MRSA among hospitalized patients have become common. Now, community-associated (CA) MRSA skin infections have increasingly been reported nationally, and some fatalities have occurred. Risk factors include exposure in jails, prisons, sports or occupational settings with regular skin-to-skin contact, and advanced age, severe illness, intravenous drug use, or immune suppression. MRSA outbreaks have been identified in California among men who have sex with men (MSM), and in prison populations.

Community associated (CA)-MRSA is distinguished from hospital-acquired MRSA by: 1) MRSA diagnosis in the outpatient setting, or by a positive culture for MRSA within 48 hours of hospital admission; 2) No history of the following established risk factors in the past 12 months:

- ▶ Hospitalization
- ▶ Surgery
- ▶ Dialysis
- ▶ Permanent indwelling catheter or percutaneous medical device
- ▶ Admission to a nursing home, hospice, or skilled nursing facility.

### Diagnosis:

The clinical presentation of MRSA skin infections may include the following:

Cellulitis: Inflammation of skin

Impetigo: Bullous (blistered) lesions or abraded skin with honey-colored crust

Infected laceration: Pre-existing cut that has become infected

Folliculitis: Infection of hair follicle (like a pimple)

Furunculosis: Deeper infection below hair follicle

Carbuncle: Multiple adjacent hair follicles and substructures are affected

Abscess: Pus-filled mass below skin structures

Many reported cases are initially described as “spider bites”. Less common sites for MRSA are the lungs, blood, urine, bones, joints, or any normally sterile body site, and may result from severe or ineffectively treated infections. Widespread infections may cause constitutional symptoms such as fever, malaise, headache and anorexia. The most common site of asymptomatic MRSA carriage is the anterior nares.

▶ Culture of skin lesions is especially useful in: 1) recurrent or persistent cases of skin infection; 2) cases of antibiotic failure; 3) cases that present with aggressive or advanced infections. Use of microbiologic culture should be encouraged to guide appropriate antibiotic selection. In the absence of symptomatic infection, culture for MRSA is generally not necessary.

### Local Data:

From the clinical laboratory of the SLO County PHD, for the year 8/1/03-7/31/04, there were a total of 164 *S. aureus* isolates, of which 76 were MRSA (46%). From the jail, of 91 isolates 56% were MRSA, while 34% of 73 *S. aureus* isolates from the general public were MRSA. Including both in- and out-

patients, for Sierra Vista and Twin Cities hospitals, the percentage of MRSA isolates increased dramatically from **1%** for the period 2/03-5/03, to **34%** for the period 5/04-7/04. Together, these data document both significant and increasing frequency of MRSA infections in our area.

### **Treatment:**

- ▶ For soft tissue infections, initial treatment is incision, drainage, and local care, rather than use of antibiotics. Inappropriate antibiotic use has been associated with the development of MRSA infection
- ▶ At this time there have been no State or National recommendations to change from standard practice in the empiric antibiotic treatment of uncomplicated skin infections. If possible, obtain cultures. However, physician follow-up is necessary in all cases since significant percentages of MRSA are resistant to erythromycin, cefazolin, cefalexin, oxacillin, augmentin, amoxicillin and ampicillin. It is not recommended to prescribe these medications in high-risk individuals.
- ▶ The majority of MRSA are sensitive to clindamycin or tetracycline, but this should be confirmed by culture. Fluoroquinolones such as levofloxacin or ciprofloxacin are not recommended as the sole treatment for MRSA infections, since resistance may rapidly develop.
- ▶ If the patient is found to have an MRSA skin infection and antibiotics are indicated, consider treatment with two drugs that the organism is susceptible to, in order to prevent the emergence of broadened resistance. In previous outbreaks of MRSA, combination therapy with TMP/SMX (Bactrim) and rifampin, or clindamycin and rifampin, have been used. The use of rifampin in patients taking protease inhibitors is generally contraindicated.
- ▶ Detailed Interim Guidelines for the evaluation and management of CA-MRSA in outpatient settings are available at: [www.metrokc.gov/health/providers/epidemiology/MRSA-guidelines.pdf](http://www.metrokc.gov/health/providers/epidemiology/MRSA-guidelines.pdf)

### **Prevention:**

Skin infections with MRSA are thought to be transmitted by close skin-to-skin contact with another person infected with MRSA, or by contact with a fomite or surface contaminated with MRSA. Standard precautions include washing hands regularly with antimicrobial soap and warm water, use of alcohol disinfectants and alcohol-based hand rubs, use of gloves during wound care, careful disposal of dressings and other contaminated materials, cleaning of surfaces with commercial disinfectant, or a 1:100 solution of diluted bleach (1 tbsp. bleach in 1 qt. Water), and laundering items from contacts in >160 degree F hot water with bleach. The heat of commercial dryers improves bacterial killing.

Education about MRSA risk factors for patients, the elderly, athletes, residents of long-term care facilities, prisons, and those with severe illnesses or immune suppression is strongly encouraged.

### **Surveillance:**

While MRSA is not a reportable disease in California or SLO County, health care providers are encouraged to report CA-MRSA. Information obtained will be valuable in understanding, treating and preventing MRSA infections in SLO County. To report, please complete a confidential morbidity report (CMR) form and FAX it to 781-5543. You may obtain one by calling 781-5506 or at <http://slopublichealth.org/contact/forms.htm>

This fact sheet was adapted from ones developed by the Washoe, NV District and Los Angeles County Health Departments.

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