# NC Consensus Guideline for Management of Suspected Community-Acquired Staphylococcus aureus (CA-MRSA) Skin and Soft Tissue Infections (SSTIs)

**Case Definition**

- Diagnosis of MRSA made in outpatient setting or by culture positive for MRSA within 48 hours of hospital admission **and**
- No history (within past 12 months) of: hospitalization, surgery, long term care residence, indwelling catheter or medical devices; dialysis, renal failure, diabetes, or other comorbidities

**Clinical Presentation**

- May look like insect or spider bite
- Folliculits, pustular lesions
- Furuncle, carbuncle (boils)
- Cellulitis, impetigo
- Infected wounds: red, swollen, painful
- Necrotizing pneumonia s/p influenza
- Fasciitis or myositis

**Risk Factors Associated With CA-MRSA**

- Athletes, military recruits, children, Pacific Islanders, Alaskan Natives, Native Americans, men who have sex with men, and prisoners
- Close skin to skin contact (especially abraded or non-intact skin), shared contaminated items such as towels, crowding, poor hygiene, contact sports, tattoos

www.cdc.gov/ncidod/dhqp/ar_mrsa_ca_clinicians.html

**Public Health Notification Required**

Report to local county health department all clusters of CA-MRSA infections in groups such as families, sports teams, and child care centers.

**Incision & drainage (I & D) of abscess with culture**

If I & D not performed, consider culture of draining wounds or aspirate or biopsy of central areas of inflammation

**Culture & antimicrobial susceptibility testing**

If erythromycin-resistant, clindamycin-susceptible, obtain "D-test" prior to clindamycin use.

**Patient Education**

Recommend standard contact precautions, reinforce hygiene, test knowledge of same (by demonstration of handwashing, local health department nurse referral). Patient Guide to Infection Control of Community-associated MRSA (Orange County Health Department and UNC Healthcare) is available online at http://www.unc.edu/depts/spice/UNC-CA-MRSA-brochure.pdf

**Mild-Moderate**

Afebrile or febrile, but no unstable co-morbidities

**Outpatient Management**

- Local care, (I & D) - may be sufficient in mild disease
- Consider topical antibiotics
- If oral antibiotics used – cephalexin or dicloxacillin preferred for MSSA
- If increased suspicion for MRSA based on presence of >1 risk factor, consider empiric therapy active against MRSA
- Adjust antibiotics based on results of culture & susceptibility testing
- Monitor response to therapy

**Severe-Critically Ill**

Appears toxic, unstable co-morbidity, sepsis syndrome, or limb or life threatening infection (e.g., necrotizing fasciitis)

**Hospital Management**

- Empiric broad-spectrum IV antibiotics active against *S. aureus*, including MRSA (e.g., vancomycin)
- Adjust antibiotics based on results of culture & susceptibility testing
- Monitor response to therapy
- Consult ID specialist if no improvement and consider alternative agents
- Switch to oral therapy based on susceptibility testing if: afebrile for 24 hours, clinically improved, able to take oral therapy, close follow-up possible

**MSSA**: Methicillin susceptible *S. aureus*
**MRSA**: Methicillin-resistant *S. aureus* (resistant to all penicillin and cephalosporins)
**Beta-lactam antibiotics**: Includes all penicillins, cephalosporins, and carbapenems

Selection of empiric therapy should be guided by local *S. aureus* susceptibility and modified based on results of culture and susceptibility testing. The duration of therapy for most SSTI is 7-10 days, but may vary depending on severity of infection and clinical response. ***NOTE: Before treating, clinicians should consult complete drug prescribing information in the manufacturer's package insert or the PDR.***

| Antimicrobial | Adult Dose | Pediatric Dose |
|---|---|---|
| Trimethoprim-sulfamethoxazole (TMP-SMX) DS | 1 to 2 DS tablets (160 mg TMP/800 mg SMX) PO bid; use lower dose with impaired renal function. | Base dose on TMP: 8-12 mg TMP (& 40-60 mg SMX) per kg/day in 2 doses; not to exceed adult dose |
| Minocycline or doxycycline | 100 mg PO bid | ***Not recommended for pediatric use - suggest consultation with infectious disease specialist before use.*** |
| Clindamycin | 300-450 mg PO qid | 10-20 mg/kg/day in 3-4 doses; not to exceed adult dose |

***If considering clindamycin, isolates resistant to erythromycin and sensitive to clindamycin should be evaluated for inducible clindamycin resistance (MLSb phenotype) using the "D test."*** Consult with your reference laboratory to determine if "D testing" is routine or must be specifically requested. If inducible resistance is present, an alternative agent to clindamycin should be chosen.

- If Group A streptococcal infection is suspected, oral therapy should include an agent active against this organism (β-lactam, macrolide, clindamycin). Tetracyclines and trimethoprim-sulfamethoxazole, although active against many MRSA, are **NOT RECOMMENDED** treatments for suspected GAS infections.
- Outpatient use of quinolones or macrolides: Fluoroquinolones, (e.g., ciprofloxin, levofloxacin, moxifloxacin, gatifloxacin) and macrolides (e.g., erythromycin, clarithromycin, azithromycin, and telithromycin are **NOT RECOMMENDED** for treatment of MRSA because of high resistance rates). If fluoroquinolones are being considered, consult with infectious disease specialist before use.
- Out patient use of linezolid in SSTI Linezolid is costly and has great potential for inappropriate use, inducing antimicrobial resistance, and toxicity. Although it is 100% bioavailable and effective in SSTI, it is not recommended for empiric treatment or routine use because of these concerns. It is strongly recommended that linezolid only be used after consultation with an infectious disease specialist to determine if alternative antimicrobials would be more appropriate.
- Topical mupirocin may be used tid for 7-10 days with or without systemic antimicrobial therapy.

| | | |
|---|---|---|
| Rifampin* | 300 mg PO bid x 5 days* | 10-12 mg/kg/day in 2 doses not to exceed 600 mg/d x 5 days)* |

*Rifampin may be used in combination with TMP-SMX, **OR** rifampin with doxycycline, **OR** rifampin with minocycline, for recurrent MRSA infection despite appropriate therapy.
***Never use rifampin monotherapy, due to the rapid emergence of resistance. Rifampin interacts with methadone, oral hypoglycemics, hormonal contraceptives, anticoagulants, protease inhibitors, phenytoin, theophylline, cardiac glycosides and other drugs.***

**Skin antisepsis** with chlorhexidine or other agents may be used in addition any of the above regimens.

**Eradication of CA-MRSA Colonization**

Efficacy of decolonization in preventing re-infection or transmission in the outpatient setting is not documented, and is NOT routinely recommended. Consultation with an infectious disease specialist is recommended before eradication of colonization is initiated.

This algorithm is available online at http://www.unc.edu/depts/spice/CA-MRSA.html
More information is available online at http://www.epi.state.nc.us/epi/gcdc/ca_mrsa/ca_mrsa.html

Modified from "Interim Guidelines for Management of Suspected Staphylococcus aureus Skin and Soft Tissue Infections" from Infectious Diseases Society of Washington, Tacoma/Pierce County Health Department, Public Health-Seattle and King County, and Washington State Department of Health, September 2004.

Developed by NC Statewide Program for Infection Control and Epidemiology (SPICE) in conjunction with the Public Health and Institutional Task Force for Best Practices, North Carolina, December 2005; revised March 2007

Copyright 2007