# Staphylococcus aureus Bacteremia Management

**Disclaimer:** This algorithm has been developed for MD Anderson using a multidisciplinary approach considering circumstances particular to MD Anderson’s specific patient population, services and structure, and clinical information. This is not intended to replace the independent medical or professional judgment of physicians or other health care providers in the context of individual clinical circumstances to determine a patient’s care. Local microbiology and susceptibility/resistance patterns should be taken into consideration when selecting antibiotics. This algorithm should not be used to treat pregnant women.

## INITIAL EVALUATION

- Blood culture positive for *S. aureus*

## ANTIBIOTIC SELECTION

### First Line:
- **MRSA bacteremia**
  - YES: Vancomycin
    - 15 mg/kg IV every 12 hours (adjust dose based on levels)
    - **or**
  - YES: Daptomycin
    - 8 mg/kg IV daily

### Second Line:
- YES: Ceftaroline
  - 600 mg IV every 8 hours
- YES: Telavancin
  - 7.5 mg/kg (maximum 750 mg) IV daily

### First Line:
- **MSSA bacteremia**
  - NO: Cefazolin
    - 2 g IV every 8 hours
  - NO: Nafcillin
    - 2 g IV every 4 hours
  - NO: Oxacillin
    - 2 g IV every 4 hours

### Second Line:
- **Daptomycin**
  - 8 mg/kg IV daily

## DURATION OF THERAPY

- **Complicated bacteremia**
  - YES: 4-6 weeks IV therapy from first negative blood culture
  - NO: 2 weeks IV therapy from first negative blood culture

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**First Line:**
- **MRSA bacteremia**
- **MSSA bacteremia**

**First Line:**
- **Cefazolin**
  - 1 g IV every 8 hours
- **Nafcillin**
  - 2 g IV every 4 hours
- **Oxacillin**
  - 2 g IV every 4 hours

**Second Line:**
- **Daptomycin**
  - 8 mg/kg IV daily

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1. Renal adjustment required as appropriate—refer to Antimicrobial Stewardship inside page for dosing recommendations

2. Daptomycin should not be used as monotherapy if evidence of pulmonary involvement

3. Combination therapy with two or more active anti-MRSA agents may be considered on a case-by-case basis

4. Beta-lactam choice: Other beta lactam agents should not be considered to be interchangeable with ceftazolin, nafcillin or oxacillin. In cases where an alternative beta-lactam is needed (e.g., concomitant infection), addition of ceftazolin, nafcillin or oxacillin should be considered on a case-by-case basis.

5. All MSSA are sensitive to cefazolin; susceptibility testing is not independently performed

6. Criteria for complicated bacteremia:
   - Endocarditis verified upon echocardiography
   - Evidence of metastatic sites of infection
   - Febrile beyond 3 days after effective therapy started

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MRSA = methicillin-resistant *Staphylococcus aureus*

MSSA = methicillin-sensitive *Staphylococcus aureus*

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3. Combination therapy with two or more active anti-MRSA agents may be considered on a case-by-case basis

4. Beta-lactam choice: Other beta lactam agents should not be considered to be interchangeable with ceftazolin, nafcillin or oxacillin. In cases where an alternative beta-lactam is needed (e.g., concomitant infection), addition of ceftazolin, nafcillin or oxacillin should be considered on a case-by-case basis.

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- **MRSA bacteremia**
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**First Line:**
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**Second Line:**
- **Daptomycin**
  - 8 mg/kg IV daily

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Therapy duration: 4-6 weeks IV therapy from first negative blood culture

Therapy duration: 2 weeks IV therapy from first negative blood culture

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Approved by Executive Committee of the Medical Staff on 1/19/2019
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SUGGESTED READINGS


SUGGESTED READINGS - continued


DEVELOPMENT CREDITS

This practice consensus statement is based on majority opinion of the Staphylococcus aureus Bacteremia Management workgroup at the University of Texas MD Anderson Cancer Center for the patient population. Theses experts included:

- Antimicrobial Stewardship Team
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