Staphylococcus aureus Measures Set (SAMS)

Measure Concepts and Supportive Evidence

Contact: Thomas Kim
Program Coordinator, Clinical Affairs
1300 Wilson Blvd Suite 300
Arlington, VA 20009
(703) 638.1502
tkim@idsociety.org

***NOTE**: IDSA is open to productive collaboration with other health care stakeholders and we invite you to review our measure concepts and contact us with feedback.*

Measure Concept (1)	Measure Specifications	
For MSSA bacteremia, a β-lactam antibiotic is the drug of choice in the hospitalized patient in the absence of a documented allergy or drug intolerance.	Numerator:	All hospitalized patients with MSSA bacteremia who are treated with a β-lactam antibiotic (e.g. nafcillin or cefazolin) as definitive therapy
	Denominator:	All hospitalized patients with MSSA bacteremia
	Exclusion:	1. Patients with a documented allergy to β-lactam antibiotics 2. Patients with a documented intolerance to a β-lactam antibiotics 3. Patients who expire within 96 hours after the initial blood cultures(s) is obtained

Supportive Evidence:

1. Small PM et al. Vancomycin for *S. aureus* endocarditis in IVDU. Antimicrobial Agents and Chemotherapy 1990; 34: 1227-31.
2. Chang FY et al. *S. aureus* bacteremia: Recurrence and the impact of antibiotic treatment in a prospective multicenter study. Medicine 2003; 82:333-9
3. Lodise TP et al. Impact of empirical-therapy selection on outcomes of IVDU with infective endocarditis caused by MSSA Antimicrobial Agents and Chemotherapy 2007; 30:398-408.
4. Stryjewski M et al. Use of vancomycin or first-generation cephalosporins for the treatment of hemodialysis-dependent patients with MSSA bacteremia CID 2007; 44:190-6.
5. Kim SH et al. Outcome of vancomycin treatment in patients with MSSA bacteremia Antimicrobial Agents and Chemotherapy 2008; 52:192-7.
6. Schweizer V et al. Comparative effectiveness of nafcillin or cefazolin vs. vancomycin in MSSA bacteremia BMC Infectious Diseases 2011; 11: 279

Measure Concept (2)	Measure Specifications	
For hospitalized patients with *Staphylococcus aureus* bacteremia, at least one set of follow-up blood cultures should be drawn within 48-96 hours to document clearance or persistence of bacteremia.	Numerator:	Patients who have an initial blood culture obtained at the time of or during an inpatient hospital admission reported positive for *Staphylococcus aureus* and have at least one additional blood culture performed 48-96 hours after initial blood culture is obtained
	Denominator:	All patients who have a positive blood culture that is obtained at the time of or during an inpatient hospital admission reported positive for *Staphylococcus aureus*
	Exclusion:	1. Patients who expire less than 96 hours after the initial positive blood culture(s) is obtained. 2. Patients who are discharged from an inpatient stay less than 96 hours after the initial positive blood culture is obtained.

Supportive Evidence:

1. Fowler V et al. Clinical identifiers of complicated *S. aureus* bacteremia. Arch Internal Med 2003; 163:2066-2072
2. Khatib R et al. Persistence in *S. aureus* bacteremia: Incidence, characteristics of patients and outcome. Scandinavian J of Infectious Diseases 2006; 38:7-14.
3. Hawkins C et al. Persistent *S. aureus* bacteremia: an analysis of risk factors and outcomes. Arch Internal Med 2007; 167:1861-1867
4. Neuner E et al. Clinical, microbiologic, and genetic determinants of persistent MRSA bacteremia Diagn Micro and ID 2010; 67:228-233.
5. Yoon Y et al. Predictors of persistent MRSA bacteremia in patients treated with vancomycin. J Antimicrob Chemotherapy 2010; 65:1015-1018

Measure Concept (3)		Measure Specifications
For adult patients with *Staphylococcus aureus* bacteremia, the minimum duration of antimicrobial therapy is 14 days.	Numerator:	All hospitalized patients with *Staphylococcus aureus* bacteremia on one or more blood cultures receiving 14 days or more of an anti-staphylococcal antimicrobial OR patients who are started on 14 days or more of anti-staphylococcal antimicrobial therapy in the hospital and discharged on continued therapy prior to completion of therapy
	Denominator:	All hospitalized patients with *Staphylococcus aureus* on one or more blood cultures
	Exclusion:	1. Patients who expire less than 14 days from initial dose of anti-staphylococcal antimicrobial

Supportive Evidence:

1. Chong Y et al. Treatment duration for uncomplicated S. aureus bacteremia to prevent relapse: analysis of a prospective observational cohort study Antimicrobial Agents and Chemotherapy 2013; 57:1150-1156.
2. Jensen AG et al. Treatment and outcome of S. aureus bacteremia: a prospective study of 278 cases. Archives of Internal Medicine 2002; 162:25-32.
3. Malanoski G et al. S. aureus catheter-associated bacteremia: minimal effective therapy and unusual infectious complications associated with arterial sheath catheters. Arch Intern Med 1995; 155:1161-1166.
4. Raad II et al. Optimal duration of therapy for catheter-related S. aureus bacteremia: a study of 55 cases and review. Clinical Infectious Diseases 1992; 14:75-82.
5. Rahal J et al. Relationship of staphylococcal tolerance, teichoic acid antibody, and serum bactericidal activity to therapeutic outcome in S. aureus bacteremia. Am J Medicine 1986; 81:43-52.
6. Walker et al Risk factors for recurrence after S. aureus bacteremia: a retrospective matched case-control study. J of Infect 2009; 58:411-416;
7. Pigrau et al. Management of catheter-related S. aureus bacteremia: when may sonographic study be unnecessary? Europ J Clin Microbiol Infect Dis 2003; 22:713-719;
8. Thomas and Morris Cannula-associated S. aureus bacteremia: outcome in relation to treatment. Internal Medicine Journal 2005; 35:319-330
9. Jenigan and Farr Short course therapy of catheter-related S. aureus bacteremia: a meta-analysis. Ann Int Med 1993; 119:304-311