Infectious Diseases Society of America
Staphylococcus aureus (MSSA) Bacteremia Measure Set

This measure set with three measure concepts was previous developed by the IDSA Quality Improvement Committee and has been updated by the current Quality Measurement & Improvement Subcommittee. These measures are intended to assist IDSA members working in or with hospitals on quality improvement initiatives around Methicillin-Susceptible *Staphylococcus aureus* (MSSA) bacteremia. IDSA is interested in feedback from members on the definitions, utility and other learning from these measures which can be submitted to clinicalaffairs@idsociety.org.

Measure Concept 1		β-lactam Antibiotic Use for Methicillin-Susceptible *Staphylococcus aureus* (MSSA) Bacteremia
Description		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
❒ Established/Endorsed Measure	**Source**	
	Link	
Measure Specifications		
Type ❒ Outcome ✓ Process ❒ Structure	**Numerator**	Patients from denominator treated with anti-staphylococcal β-lactam antibiotic once isolate is identified as a methicillin susceptible organism
	Denominator	Hospitalized patients of any age with blood cultures that grow MSSA
	Exclusion(s)	1. Patients with a documented allergy or intolerance to β-lactam antibiotics 2. Patients who expire within 96 hours after the initial blood cultures(s) is obtained 3. Concomitant infection with MRSA or VRE
IDSA Guideline(s)		Staphylococcus aureus Bacteremia
Supporting Evidence (Top 3 – 5)		1. Chang FY et al. *S. aureus* bacteremia: Recurrence and the impact of antibiotic treatment in a prospective multicenter study. Medicine 2003; 82:333-9 2. 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. 3. 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. 4. Kim SH et al. Outcome of vancomycin treatment in patients with MSSA bacteremia Antimicrobial Agents and Chemotherapy 2008; 52:192-7. 5. Schweizer V et al. Comparative effectiveness of nafcillin or cefazolin vs. vancomycin in MSSA bacteremia BMC Infectious Diseases 2011; 11: 279
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Measure Concept 2		Follow-up Blood Cultures for *Staphylococcus aureus* bacteremia
Description		For hospitalized patients with *Staphylococcus aureus* bacteremia, at least one set of follow-up blood cultures should be drawn within 96 hours to document clearance or persistence of bacteremia
❒ Established/Endorsed Measure	**Source**	
	Link	
Measure Specifications		
Type ❒ Outcome ✓ Process ❒ Structure	**Numerator**	Patients in the denominator with at least one additional blood culture performed within 96 hours after initial blood culture is obtained
	Denominator	Hospitalized patients of any age who have a positive blood culture that is obtained at any time during an inpatient hospital admission and reported positive for *Staphylococcus aureus*
	Exclusion(s)	Patients who are discharged or expire less than 96 hours after the initial positive blood culture(s) is obtained.
IDSA Guideline(s)		Staphylococcus aureus Bacteremia
Supporting Evidence (Top 3 – 5)		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
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Measure Concept 3		Minimum Antimicrobial Therapy for *Staphylococcus aureus* Bacteremia
Description		For adult patients with *Staphylococcus aureus* bacteremia, the minimum duration of antimicrobial therapy is 14 days.
❒ Established/Endorsed Measure	**Source**	
	Link	
Measure Specifications		
Type ❒ Outcome ✓ Process ❒ Structure	**Numerator**	Patients from the denominator who received 14 days or more of an anti-staphylococcal antimicrobial OR patients who were started on anti-staphylococcal antimicrobial therapy in the hospital and discharged less than 14 days after with documentation of prescribed continued therapy to 14 days
	Denominator	Hospitalized adult patients with one or more blood cultures positive for *Staphylococcus aureus* at any time during inpatient stay
	Exclusion(s)	Patients who expire less than 14 days from initial dose of anti-staphylococcal antimicrobial
IDSA Guideline(s)		PIDS/IDSA Guideline on Diagnosis and Management of Acute Hematogenous Osteomyelitis in Pediatrics Staphylococcus aureus Bacteremia
Supporting Evidence (Top 3 – 5)		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. Walker et al Risk factors for recurrence after S. aureus bacteremia: a retrospective matched case-control study. J of Infect 2009; 58:411-416; 4. Thomas and Morris Cannula-associated S. aureus bacteremia: outcome in relation to treatment. Internal Medicine Journal 2005; 35:319-330 5. Jenigan and Farr Short course therapy of catheter-related S. aureus bacteremia: a meta-analysis. Ann Int Med 1993; 119:304-311
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