

Our approach to empiric antibiotic therapy for suspected *Staphylococcus aureus* or beta-hemolytic *Streptococcus* skin and soft tissue infection in children >28 days^[1-6]

Desired spectrum	First-line therapy	Second-line therapy
SSTI and hemodynamic instability*		
MRSA MSSA Beta-hemolytic <i>Streptococcus</i>	Parenteral therapy: Vancomycin plus either: ▪ Nafcillin, or ▪ Oxacillin	One of the following: ▪ Linezolid IV¶ ▪ Daptomycin IV¶ ▪ Ceftaroline IV¶
	Oral therapy: Hemodynamically unstable children with SSTI should receive parenteral therapy	
Purulent/fluctuant SSTI (abscess, furuncle, carbuncle, purulent cellulitis)		
High prevalence of MRSA ^Δ or purulent/fluctuant SSTI of the face, hand, or perineum		
MRSA	Oral therapy with one of the following: ▪ Clindamycin[◇] ▪ TMP-SMX ▪ Doxycycline[§]	One of the following: ▪ Vancomycin IV (if not used for initial therapy) ▪ Ceftaroline IV¶ ▪ Linezolid oral or IV¶ ▪ Daptomycin IV¶ ▪ Tedizolid oral or IV¶ (for patients ≥12 years)
	Parenteral therapy with one of the following: ¥ ▪ Clindamycin IV (if the risk of bacteremia is low) ▪ Vancomycin IV	One of the following: For patients of all ages: ▪ Vancomycin IV (if not used for initial therapy) ▪ Ceftaroline IV¶

		▪ Linezolid IV[¶] ▪ Daptomycin IV[¶] ▪ Dalbavancin IV[¶] ▪ Tedizolid IV[¶] (for patients ≥12 years) For patients ≥18 years: ▪ Oritavancin IV ▪ Telavancin IV
--	--	--

Low prevalence of MRSA^Δ and SSTI not on face, hand, or perineum

MSSA	Oral therapy with one of the following: ▪ Cephalexin ▪ Cefadroxil ▪ Cefuroxime ▪ Cloxacillin (not available in the United States)	One of the following: ▪ Oral clindamycin[◇] ▪ Oral TMP-SMX ▪ Oral doxycycline[§]
	Parenteral therapy with one of the following: ▪ Cefazolin IV ▪ Clindamycin IV ▪ Nafcillin IV ▪ Oxacillin IV	One of the following:[¥] ▪ Clindamycin IV ▪ Vancomycin IV

Cellulitis

Risk factors for MRSA

Beta-hemolytic <i>Streptococcus</i> MRSA	Oral therapy with one of the following: ▪ Clindamycin[◇] (preferred) ▪ Amoxicillin plus TMP-SMX ▪ Cephalexin plus TMP-SMX ▪ Amoxicillin plus doxycycline[§] ▪ Cephalexin plus doxycycline[§]	One of the following: ▪ Linezolid oral or IV[¶] ▪ Vancomycin IV ▪ Dalbavancin[¶] ▪ Tedizolid oral or IV[¶] (for patients ≥12 years)
	Parenteral therapy with one of the following:[¥] ▪ Clindamycin IV ▪ Vancomycin IV	One of the following: ▪ Vancomycin IV (if not used for initial therapy) ▪ Ceftaroline IV[¶] ▪ Linezolid IV[¶]

		▪ Daptomycin IV[¶] ▪ Tedizolid IV[¶] (for patients ≥ 12 years)
No risk factors for MRSA		
Beta-hemolytic <i>Streptococcus</i> MSSA	Oral therapy with one of the following: ▪ Cephalexin (preferred) ▪ Cefadroxil ▪ Cefuroxime ▪ Cloxacillin (not available in the United States)	One of the following:[‡] ▪ Oral clindamycin[◇] (if not used initially) ▪ Oral amoxicillin plus TMP-SMX ▪ Oral amoxicillin plus doxycycline[§]
	Parenteral therapy with one of the following: ▪ Cefazolin IV ▪ Clindamycin IV ▪ Nafcillin IV ▪ Oxacillin IV	One of the following:[¥] ▪ Clindamycin IV (if not used initially) ▪ Vancomycin IV
Erysipelas		
Beta-hemolytic <i>Streptococcus</i>	Oral therapy with one of the following: ▪ Amoxicillin ▪ Penicillin	One of the following: ▪ Oral cephalexin ▪ Oral clindamycin
	Parenteral therapy with one of the following: ▪ Cefazolin IV ▪ Nafcillin IV ▪ Oxacillin IV ▪ Ceftriaxone IV	One of the following: ▪ Clindamycin IV
Impetigo or folliculitis at multiple sites		
Beta-hemolytic <i>Streptococcus</i> MRSA	Oral therapy with one of the following: ▪ Clindamycin[◇] (preferred) ▪ Amoxicillin plus TMP-SMX ▪ Cephalexin plus TMP-SMX ▪ Amoxicillin plus doxycycline[§] ▪ Cephalexin plus doxycycline[§]	Patients who do not respond to initial therapy for beta-hemolytic <i>Streptococcus</i> and MRSA should be reevaluated for mimics of impetigo and other causes of folliculitis [†]

This table is meant for use with UpToDate content on *S. aureus* and beta-hemolytic streptococcal SSTIs in children. Refer to related UpToDate content for additional information about antimicrobial susceptibility testing, epidemiology of MRSA in children, and antimicrobial agents for patients ≥ 18 years of age.

SSTI: skin and soft tissue infection; MRSA: methicillin-resistant *S. aureus*; MSSA: methicillin-susceptible *S. aureus*; IV: intravenous; TMP-SMX: trimethoprim-sulfamethoxazole.

* Additional activity against gram-negative pathogens may be necessary.

¶ Some of these agents may not be available at children's hospitals. Consultation with an expert in infectious diseases is suggested to ensure that these are the best options.

Δ We consider the prevalence of MRSA to be high when ≥ 10 to 15% of *S. aureus* isolates are MRSA; other experts may choose to provide coverage for MRSA at different prevalence levels.

◇ If the prevalence of clindamycin-resistant *S. aureus* in the community is low (eg, $<15\%$). If *S. aureus* is isolated, D testing is required to evaluate for inducible resistance.

§ Tetracycline antibiotics may cause permanent tooth discoloration for children <8 years if used repeatedly. However, doxycycline binds less readily to calcium than other tetracyclines and may be used for ≤ 21 days in children of all ages.^[1]

¥ The threshold prevalence of clindamycin-resistant *S. aureus* for choosing vancomycin varies from center to center, usually ranging from 10 to 25%, trying to balance the benefit of definitive therapy for the patient with the risk of increasing vancomycin resistance in the community.

Additional considerations in the decision to choose vancomycin include the prevalence of MRSA in the community, the severity of illness, and the turn-around time for susceptibilities.

‡ Dicloxacillin is another option for second-line therapy for beta-hemolytic *Streptococcus* and MSSA but is infrequently used because it must be given four times per day.

† Refer to UpToDate content on impetigo and folliculitis.

References:

1. American Academy of Pediatrics. Tetracyclines. In: Red Book: 2021-2024 Report of the Committee on Infectious Diseases, 32nd ed, Kimberlin DW, Barnett ED, Lynfield R, Sawyer MH (Eds), American Academy of Pediatrics, Itasca, IL 2021. p.866.
 2. American Academy of Pediatrics. Tables of antibacterial drug dosages. In: Red Book: 2021-2024 Report of the Committee on Infectious Diseases, 32nd ed, Kimberlin DW, Barnett ED, Lynfield R, Sawyer MH (Eds), American Academy of Pediatrics, Itasca, IL 2021. p.876.
 3. Liu C, Bayer A, Cosgrove SE, et al. Clinical practice guidelines by the Infectious Diseases Society of America for the treatment of methicillin-resistant *Staphylococcus aureus* infections in adults and children. Clin Infect Dis 2011; 52:e18.
 4. Stevens DL, Bisno AL, Chambers HF, et al. Practice guidelines for the diagnosis and management of skin and soft tissue infections: 2014 update by the Infectious Diseases Society of America. Clin Infect Dis 2014; 59:147.
 5. Sivextro (tedizolid phosphate) package insert. Whitehouse Station, NJ: Merck Sharp & Dohme Corp; 2020.
 6. Dalvance (dalbavancin) package insert. Madison, NJ: 2021: Allergan USA, Inc; 2021.
-