Osteomyelitis

CHI Formulary Treatment algorithm

Treatment algorithm – November 2023

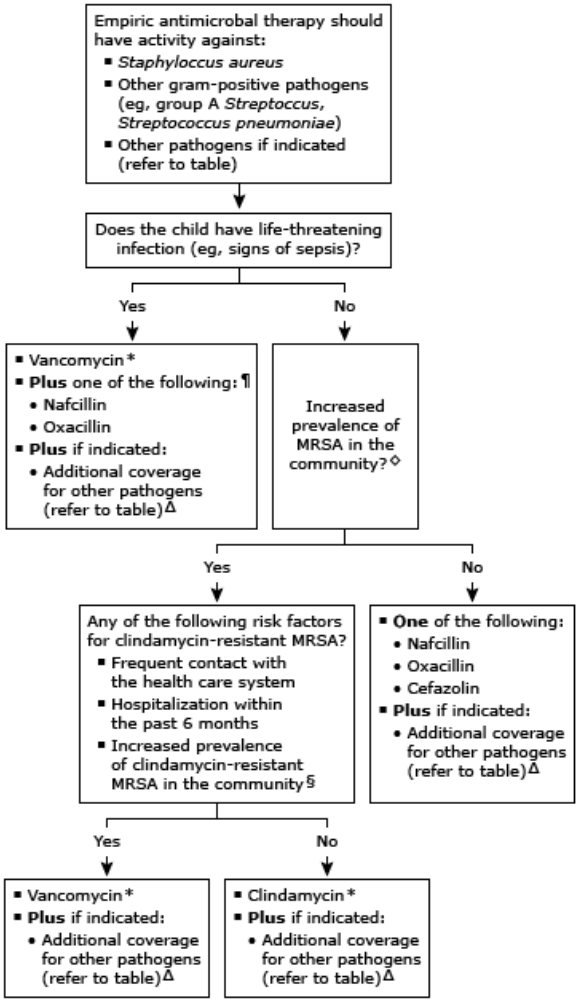
Supporting treatment algorithms for the clinical management of

Osteomyelitis

Figure 1, 2 and 3 outline a comprehensive treatment algorithm on **Osteomyelitis**, aimed at addressing the different lines of treatment after thorough review of medical and economic evidence by CHI committees.

For further evidence, please refer to CHI **Osteomyelitis** full report. You can stay updated on the upcoming changes to our formulary by visiting our website at https://chi.gov.sa/AboutCCHI/CCHIprograms/Pages/IDF.aspx

Our treatment algorithm offers a robust framework for enhancing patient care and optimizing treatment outcomes across a range of treatment options, holding great promise for improving healthcare delivery.



Population	Potential pathogens	Additional empiric therapy
▪ Age 6 to 36 months and in day care or history of oral ulcers before onset of musculoskeletal symptoms	▪ *Kingella kingae*	▪ Cefazolin if child is not improving as expected and is receiving vancomycin or clindamycin
▪ Incomplete Hib immunization in a child <2 years from area with low rates of Hib immunization	▪ Hib	▪ Cefotaxime or ceftriaxone
▪ Sickle cell diseaseΔ ▪ Reptile or amphibian exposure ▪ GI symptoms	▪ *Salmonella*	▪ Cefotaxime or ceftriaxone
▪ Chronic granulomatous diseaseΔ	▪ Unusual organisms (eg, fungi, filamentous bacteria, gram-negative bacteria)	▪ Cefotaxime or ceftriaxone
▪ Recent GI surgery or complex urinary tract anatomy	▪ Enteric gram-negative organisms	Either: ▪ A third- or fourth-generation cephalosporin (eg, cefotaxime, ceftriaxone, cefepime), **or** ▪ An aminoglycoside (eg, gentamicin)
▪ Injection drug user	▪ *Pseudomonas aeruginosa*	▪ Ceftazidime

Figure 1: Empiric Antimicrobial Therapy for Children ≥3 Months of Age with Acute Hematogenous Osteomyelitis

MRSA: methicillin-resistant *S. aureus*; Hib: *Haemophilus influenzae* type b; GI: gastrointestinal; MSSA: methicillin-susceptible *S. aureus*.

* Alternatives to vancomycin or clindamycin when MRSA is a concern include linezolid or daptomycin (daptomycin only if the child is ≥1 year of age and has no concomitant pulmonary involvement).

¶ For children with life-threatening infections, the combination of vancomycin plus either nafcillin or oxacillin provides bactericidal activity against both MRSA and MSSA.

Δ Consultation with an infectious disease specialist may be warranted for immunocompromised patients (eg, sickle cell disease, chronic granulomatous disease) because they may have infections with unusual pathogens or resistance profiles.

◊ We consider the prevalence of MRSA in the community to be increased if ≥10% of *S. aureus* isolates are MRSA; other experts may use a different threshold.

§ We consider the prevalence of clindamycin-resistant MRSA to be increased if ≥10% of MRSA isolates are resistant to clindamycin (constitutive and inducible); other experts may use a different threshold.

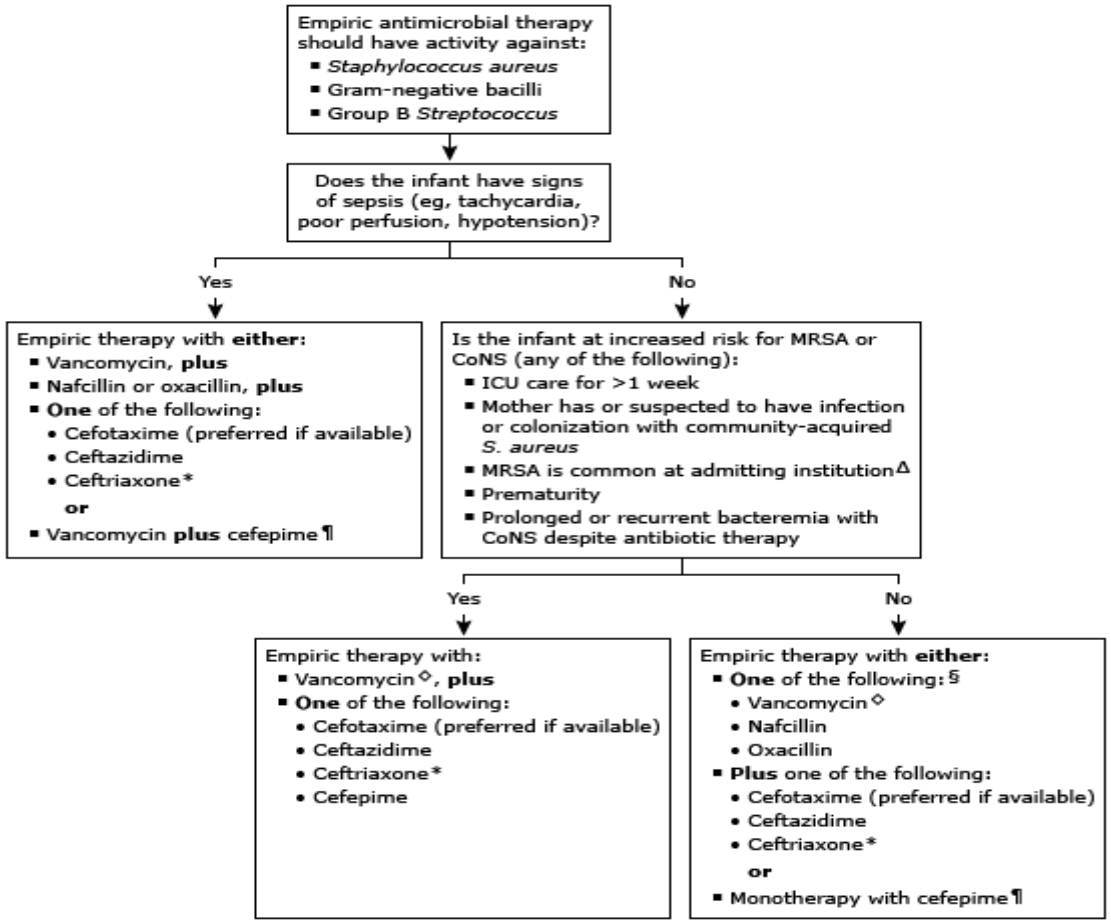


Figure 2: Empiric Antimicrobial Therapy for Infants <3 Months of Age with Acute Hematogenous Osteomyelitis and/or Bacterial Arthritis

For infants with allergy or intolerance to cephalosporins (very uncommon in this age group), we suggest consultation with an expert in pediatric infectious diseases.

MRSA: methicillin-resistant *S. aureus*; CoNS: coagulase-negative staphylococci; ICU: intensive care unit; MSSA: methicillin-susceptible *S. aureus*.

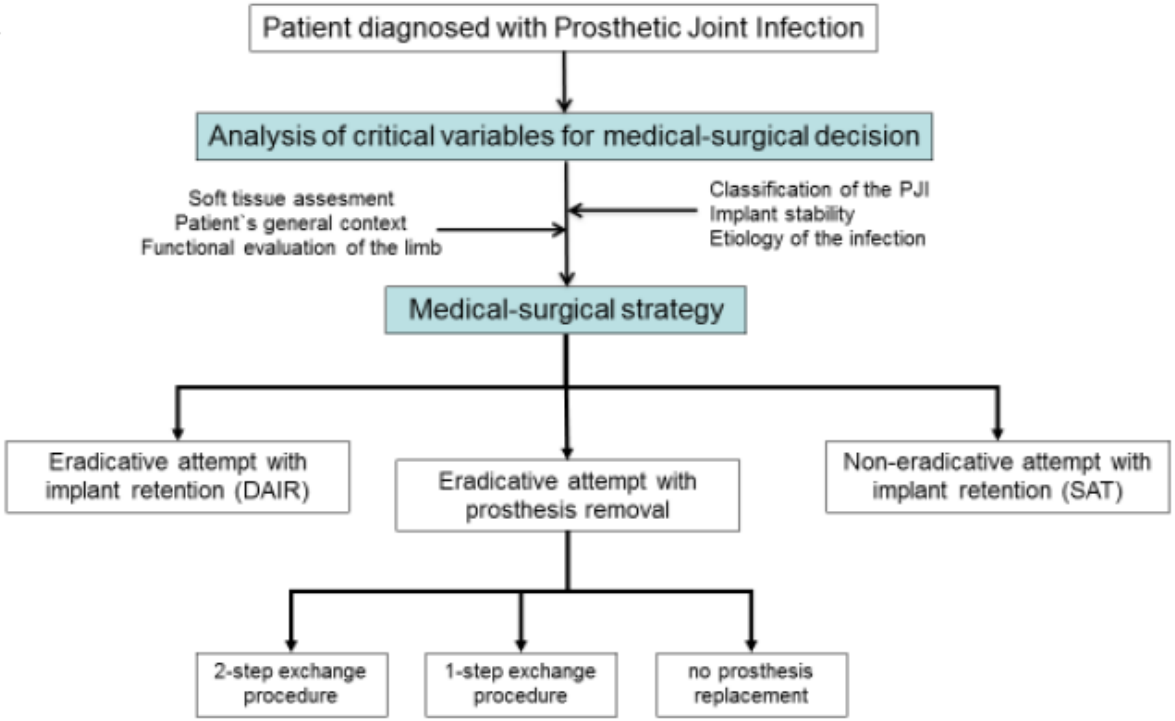
* Ceftriaxone is contraindicated in infants ≤28 days if they require or are expected to require concomitant treatment with intravenous solutions containing calcium, including parenteral nutrition.

¶ Some experts would add nafcillin or oxacillin for additional activity against MSSA.

Δ We consider MRSA to be common if ≥10% of *S. aureus* isolates are MRSA. Other experts may use a different threshold.

◊ At some institutions, clindamycin is used as an alternative to vancomycin if <10% of *S. aureus* isolates are clindamycin resistant and the infant has localized infection with no signs of sepsis.

§ Some experts also include cefazolin as an antistaphylococcal agent for infants age 1 to 3 months in whom central nervous system infection has been excluded.



[1]

Figure 3: Prosthetic Joint Infection Treatment Algorithm

[1] Management of prosthetic joint infections. Clinical practice guidelines by the Spanish Society of Infectious Diseases and Clinical Microbiology (SEIMC) 2017
Clinical Practice Guideline by the Pediatric Infectious Diseases Society and the Infectious Diseases Society of America: 2021 Guideline on Diagnosis and Management of Acute Hematogenous Osteomyelitis in Pediatrics
SPILF (French Society of Infectious Pathology) update on bacterial arthritis in adults and children 2023