**Inpatient Empiric Antibiotic Guidelines for Pediatric Bone and Joint infections (Osteomyelitis, Septic Arthritis, Septic Bursitis)**

**Scope/Definitions**

This guideline applies to the following infections:

* Hematogenous Osteomyelitis
* Septic arthritis
* Septic bursitis

Skin and soft tissue infections including necrotizing fasciitis and pyomyositis can be found in the **SSTI empiric antibiotic guideline**. This guideline only applies to previously healthy children with osteomyelitis of the long bones/pelvis.

For patients in any of the following groups, or similar ones not listed, please **page ID**:

* Patients with immune deficiencies or receiving immunosuppressive agents
* Patients with sickle cell disease
* Patients with penetrating trauma
* Patients who are chronically immobile and/or have pressure ulcers
* Patients with suspected infections of the skull/facial bones/orbits
* Patients with suspected infections of the vertebrae
* Patients with malabsorption
* Patients with any artificial material or hardware near the site of infection

**Shared Workup**

The following initial labs/imaging are recommended for suspected bone/joint infections:

* Blood culture
* CBC with differential
* CRP, ESR, procalcitonin
* Basic metabolic panel
* Vancomycin trough (before 4th dose if starting the patient on vancomycin)

Note: Repeat CBC/ESR/CRP 2-3 days after initial labs to trend for signs of improvement

Imaging

All patients should receive an **MRI with contrast** to better delineate anatomically the site and nature of the infection. Contrast is necessary to firmly establish the diagnosis of osteomyelitis. If contrast is contraindicated, an MRI without contrast may be performed but is a suboptimal study. If MRI is overall contraindicated, triple-phase bone scan may be performed but does not give as good anatomic resolution re: bone vs. joint vs. bursa

**Shared antibiotic options**

Initial antibiotic choice for all 3 infections depends on the presence or absence of MRSA risk factors as defined below:

* History of prior MRSA infection in the patient
* History of MRSA in a close household contact
* History of recurrent skin abscesses
* Any child who participates in mat sports or sports with heavy use of equipment (i.e. wrestling, football)

The initial choice also depends on age, with patients <3 at greater risk of *Kingella* infections as described below.

**Previously healthy children with no MRSA risk**

* Cefazolin IV 100 mg/kg/day divided q8h (nafcillin has equivalent coverage but at Stony Brook is 5x more expensive)

**Suspected MRSA infection (see above)**

* Clindamycin IV 40 mg/kg/day divided q8h

**Cephalosporin/beta-lactam allergy**

* Clindamycin IV 40 mg/kg/day divided q8h

**Severely ill/septic and MRSA suspected**

* Vancomycin IV 15 mg/kg/dose q6h (dose q12h – q8h in adolescents)

**Patients <3 who do not improve on coverage above**

* Add Ceftriaxone 75 mg/kg/day divided q12h to cover *Kingella kingae*

**Transition to Oral Therapy**

Discharge home on oral therapy should be the standard of care for any patient with any of the infections above if they improve in first 3-5 days of therapy and meet the following criteria:

* Defervescence within 3-5 days
* CRP trending down within 3-5 days
* Pain improving
* Ready for discharge by other criteria
* Negative blood culture (if positive for bacteremia, will require at least 14 days of IV before oral transition)

The following criteria would be contraindications for discharge on orals and a PICC or other central line would be recommended for outpatient parenteral antibiotic therapy (OPAT):

* Resistant isolate with no oral options
* Malabsorption or concerns about oral tolerance
* Abscess, especially if unable to drain fully
* Long or complicated hospital stay (unless fully unrelated to primary issue)

Length of treatment would be as follows:

* Septic bursitis: 3 weeks
* Septic arthritis 3-4 weeks
* Osteomyelitis 4-6 wks