

## SIU SOM PEDIATRICS

### EMPIRIC ANTIBIOTIC RECOMMENDATIONS FOR SELECT INFECTIONS

This document provides guidance on empiric treatment recommendations for select infections based upon current guidelines and local antibiogram data. Therapy should be modified based upon patient specific culture results once available. These recommendations do not establish a standard of care to be followed in every case. Each case is different and those individuals involved in providing health care are expected to use their judgement in determining what is in the best interests of the patient based on the circumstances existing at the time.

#### **BONE AND JOINT**

[Open fracture prophylaxis / lawnmower accident](#)  
[Osteoarticular infections, > 3 months to < 5 years](#)  
[Osteoarticular infections, > 5 years](#)

#### **CENTRAL NERVOUS SYSTEM**

[Brain abscess](#)  
[CSF Shunt infections / open skull fractures](#)  
[Meningitis \(CSF pleocytosis present\), patient ≤ 28 days of age](#)  
[Meningitis \(CSF pleocytosis present\), patient > 28 days of age](#)  
[Meningoencephalitis, Herpes Simplex Virus](#)

#### **GASTROINTESTINAL / ABDOMINAL**

[Appendicitis](#)  
[Button battery ingestion](#)  
[Cholangitis / Cholecystitis](#)  
[Clostridioides difficile associated diarrhea](#)  
[Diarrhea](#)  
[Intra-abdominal infection \(community acquired\)](#)

#### **GENITOURINARY TRACT**

[Bacterial vaginosis](#)  
[Epididymitis](#)  
[Genital herpes](#)  
[Pelvic inflammatory disease \(PID\)](#)  
[Sexually transmitted infection \(STI\)](#)  
    [Chlamydia trachomatis](#)  
    [Neisseria gonorrhoeae](#)  
    [Syphilis](#)  
    [Trichomoniasis](#)  
[Urinary tract infection](#)  
[Urinary tract infection, pyelonephritis](#)

#### **RESPIRATORY TRACT / HEENT**

[Aspiration pneumonia](#)  
[Community acquired pneumonia \(CAP\), uncomplicated](#)  
[Community acquired pneumonia \(CAP\), complicated](#)  
[Dental abscess](#)  
[Hospital / Ventilator associated pneumonia \(HAP / VAP\)](#)  
[Influenza](#)  
[Mastoiditis](#)  
[Otitis media, acute](#)  
[Orbital cellulitis \(post-septal\)](#)  
[Periorbital cellulitis \(pre-septal\)](#)  
[Pertussis](#)  
[Pharyngitis](#)  
[Retro- or para- pharyngeal abscess](#)  
[Sinusitis, acute](#)  
[Tonsillar or peritonsillar abscess](#)  
[Tracheitis \(intubated / tracheostomy\)](#)  
[Tracheitis \(non-intubated following croup-like illness\)](#)

#### **SKIN AND SOFT TISSUE**

[Abscess](#)  
[Cellulitis \(nonpurulent\)](#)  
[Human bite / Animal bite](#)  
[Lymphadenitis, suppurative](#)  
[Necrotizing fasciitis](#)  
[Pyomyositis](#)  
[Staphylococcus scalded skin](#)  
[Surgical wound infection](#)

#### **MISCELLANEOUS**

[Febrile neutropenia \(heme/onc patients\)](#)  
[Lemierre's syndrome](#)  
[R/O catheter-associated bloodstream infection \(CLABSI\)](#)  
[R/O sepsis, 0 – 28 days \(no central lines\)](#)  
[R/O sepsis, > 1 month of age \(no central lines, no concern for meningitis\)](#)  
[Sickle cell disease with fever](#)  
[Tickborne infections](#)  
[Toxic shock syndrome](#)

Durations listed are based on the literature cited or has been agreed upon by the ID division. Some duration of therapies have large variability and are too dependent on clinical course to be specific.

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>Bone and Joint<sup>1-10</sup></b>					
<b>Open fracture prophylaxis / Lawnmower accident</b>	Polymicrobial	<p><u>GRADE I/II OPEN FRACTURES:</u> Cefazolin 33 mg/kg/dose IV q8h (max: 2000 mg/dose)</p> <p><u>GRADE III OPEN FRACTURES:</u> Cefazolin 33 mg/kg/dose IV q8h (max: 2000 mg/dose) PLUS Gentamicin (pharmacy to dose)</p>	<p><u>ALLERGY:</u> <u>GRADE I/II:</u> Clindamycin 13 mg/kg/dose IV q8h (max: 600 mg/dose)</p> <p><u>GRADE III:</u> Clindamycin 13 mg/kg/dose IV q8h (max: 600 mg/dose) PLUS Gentamicin (pharmacy to dose)</p>	<p>Prophylaxis: Grade I: 24-48 hrs Grade II/III: 48-72 hrs</p> <p><u>Antibiotic prophylaxis should not extend &gt;24 hours after skin closure for open fractures</u></p>	<p>Recommend ID Consult for Grade III or concern for infection</p> <p>Verify tetanus vaccine status</p> <p>Consider adding high dose PCN if there is presence of fecal material or <i>Clostridium</i> contamination of wound (farm related injuries)</p> <p>Cultures for routine, fungal, and acid-fast pathogens are indicated <u>at the time an infection is suspected</u></p>
<b>Osteoarticular infections &gt; 3 months to &lt; 5 years</b>	MSSA or MRSA <i>K. kingae</i> <i>S. pyogenes</i> <i>S. pneumoniae</i>	Cefazolin 33 mg/kg/dose IV q8h (max: 2000 mg/dose)	<p><u>IF H/O MRSA COLONIZATION/ INFECTION OR HOUSEHOLD CONTACT WITH MRSA:</u> ADD Clindamycin 13 mg/kg/dose IV/PO q8h (max: 600 mg/dose)</p> <p><u>IF TOXIC OR BACTEREMIC:</u> ADD Vancomycin (see doing guide)</p> <p><u>IN PATIENTS WITH SICKLE CELL DISEASE OR NO H/O HIB VACCINE:</u> Ceftriaxone 100 mg/kg/dose IV q24h (max: 2000 mg/day) PLUS Clindamycin 13 mg/kg/dose IV/PO q8h (max: 600 mg/dose)</p>	≥ 4 weeks	<p>Recommend ID consult</p> <p>Obtain NP swab and send for MRSA culture</p> <p>In clinically stable patients consider delaying antibiotics if bone biopsy or joint aspiration planned</p> <p>Cephalexin high dose: 25 mg/kg/dose PO q6h (max: 4000 mg/day)</p>

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>Osteoarticular infections</b> ≥ 5 years	MSSA or MRSA <i>S. pyogenes</i> <i>S. pneumoniae</i>	Clindamycin 13 mg/kg/dose IV/PO q8h (max: 600 mg/dose)	<u>IF TOXIC OR BACTEREMIC:</u> ADD Vancomycin (pharmacy to dose)  <u>IN SICKLE CELL DISEASE OR NO H/O HIB VACCINE:</u> ADD Ceftriaxone 100 mg/kg/dose IV q24h (max: 2000 mg/day)  <u>IF CONCERN FOR GONORRHEA:</u> Ceftriaxone 50 mg/kg/dose IV q24h (max: 1000 mg/dose) PLUS Doxycycline 100 mg PO q12h x 7 days	≥ 4 weeks	Recommend ID consult  Obtain NP swab and send for MRSA culture  In clinically stable patients consider delaying antibiotics if bone biopsy or joint aspiration planned  Cephalexin high dose: 25 mg/kg/dose PO q6h (max: 4000 mg/day)
<b>Central Nervous System<sup>11-14</sup></b>					
<b>Brain abscess</b>	<i>S. anginosus</i> group Anaerobes Enteric gram negatives MSSA or MRSA	Vancomycin (pharmacy to dose) PLUS Ceftriaxone 50 mg/kg/dose IV q12h (max: 2000 mg/dose) PLUS Metronidazole 7.5 mg/kg/dose IV q6h (max: 500 mg/dose)	<u>CEPHALOSPORIN ALLERGY:</u> Vancomycin (pharmacy to dose) PLUS Meropenem 40 mg/kg/dose IV q8h (max: 2000 mg/dose)	≥ 4 weeks	Recommend ID Consult
<b>CSF shunt infections / Open skull fracture</b>	CONS <i>S. aureus</i> Aerobic gram negative bacilli (including <i>P. aeruginosa</i> ) <i>Cutibacterium acnes</i>	Vancomycin (pharmacy to dose) PLUS Cefepime 50 mg/kg/dose IV q8h (max: 2000 mg/dose)	<u>CEPHALOSPORIN ALLERGY:</u> Vancomycin (pharmacy to dose) PLUS Meropenem 40 mg/kg/dose IV q8h (max: 2000 mg/dose)		Recommend ID Consult  Prior to antibiotics obtain shunt CSF studies and cultures (culture has priority over PCR)

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>Meningitis (CSF pleocytosis present), patient ≤ 28 days of age</b>	<i>E. coli</i> <i>S. agalactiae</i> (GBS) <i>L. monocytogenes</i>	Ampicillin PLUS Ceftazidime (see neonatal dosing guide)		<i>N. meningitidis</i> : 7 days <i>H. influenzae</i> : 7 days <i>S. pneumoniae</i> : 10 – 14 days <i>S. agalactiae</i> (GBS): 14 – 21 days	Recommend ID Consult
<b>Meningitis (CSF pleocytosis present), patient &gt; 28 days of age</b>	<i>S. pneumoniae</i> <i>N. meningitidis</i> <i>S. agalactiae</i> (GBS) <i>H. influenzae</i> <i>E. coli</i>	Ceftriaxone 50 mg/kg/dose IV q12h (max: 2000 mg/dose) +/- Vancomycin* (pharmacy to dose)	<u>CEPHALOSPORIN ALLERGY:</u> Vancomycin (pharmacy to dose) PLUS Meropenem 40 mg/kg/dose IV q8h (max: 2000 mg/dose)	Aerobic gram negative bacilli: 21 days <i>L. monocytogenes</i> : ≥ 21 days	Recommend ID Consult  *Addition of vancomycin recommended if patient is septic and/or CSF is highly suggestive of bacterial meningitis  Give ceftriaxone before vancomycin
<b>Meningoencephalitis, Herpes Simplex Virus</b>	HSV1 HSV2	<u>IN ADDITION TO EMPIRIC ANTIBIOTICS FOR MENINGITIS:</u> <u>&lt; 3 months:</u> Acyclovir 20 mg/kg/dose IV q8h <u>3 months – 11 years:</u> Acyclovir 15 mg/kg/dose IV q8h <u>≥ 12 years:</u> Acyclovir 10 mg/kg/dose IV q8h		21 days minimum (repeat HSV CSF PCR towards the end of treatment; if positive extend therapy by 1 week with repeat testing)	Recommend ID Consult  Ideal body weight (IBW) should be used for dosing in obese patients
<b>Gastrointestinal/Abdominal<sup>15-25</sup></b>					
<b>Appendicitis</b>	Enteric gram negative bacilli Anaerobes	Ceftriaxone 50 mg/kg/dose IV q24h (max: 2000 mg/dose) PLUS Metronidazole 30 mg/kg/dose IV q24h (max: 1500 mg/dose)	<u>ALLERGY:</u> Ciprofloxacin 10 mg/kg/dose IV q12h (max: 400 mg/dose) PLUS Metronidazole 30 mg/kg/dose IV q24h (max: 1500 mg/dose)	Uncomplicated: pre-op only Gangrenous: up to 24 hours post-op Perforated: 7 days Non-operative: 7 days	Recommend ID consult if abscess  See appendicitis protocol

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>Button battery ingestion (esophageal injury / perforation)</b>	Polymicrobial: <i>S. pyogenes</i> <i>S. anginosus</i> group <i>Haemophilus spp.</i> Oral anaerobes MRSA or MSSA	Antibiotics only indicated if evidence of esophageal injury or perforation  Ampicillin/sulbactam 50 mg/kg/dose ampicillin component IV q6h (max: 2000 mg ampicillin/dose)	<u>ALLERGY:</u> Clindamycin 13 mg/kg/dose IV q8h (max: 600 mg/dose)	≥ 7 days Final duration to be determined based on extent of injury	
<b>Cholangitis / Cholecystitis</b>	Enteric gram negative bacilli <i>Enterococcus spp.</i> Anaerobes	Ceftriaxone 50 mg/kg/dose IV q24h (max: 2000 mg/dose) PLUS Metronidazole 10 mg/kg/dose IV q8h (max: 500 mg/dose)  <u>IF SEVERE:</u> ADD Ampicillin 50 mg/kg/dose IV q6h (max: 2000 mg/dose)	<u>ALLERGY:</u> Ciprofloxacin 10 mg/kg/dose IV q12h (max: 400 mg/dose) PLUS Metronidazole 10 mg/kg/dose IV q8h (max: 500 mg/dose)		

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>C. difficile-associated diarrhea</b>	<i>Clostridioides difficile</i>  Please defer C. Diff testing on patients younger than 2 yrs of age as they may be colonized with C. Diff	<u>NON-SEVERE:</u> Initial episode/1 <sup>st</sup> recurrence Metronidazole 7.5 mg/kg/dose PO q6h (max: 500 mg/dose)  <u>SEVERE:</u> Vancomycin 10 mg/kg PO q6h (max: 125 mg/dose)  <u>FULMINANT:</u> Vancomycin 10 mg/kg/dose PO q6h (max: 500 mg/dose) PLUS Metronidazole 10 mg/kg/dose IV q8h (max: 500 mg/dose)		10 days	<u>NON-SEVERE:</u> diarrhea and minimal symptoms  <u>SEVERE:</u> (without ileus, not life-threatening): WBC > 15, WBC < 5, albumin < 2.5, elevated SCr  <u>FULMINANT:</u> (with ileus or life-threatening): perforation, toxic megacolon, pseudomembranes on colonoscopy, colonic ischemia, or hemodynamic collapse (i.e. vasopressors required) without other obvious cause. Consider adding rectal vancomycin.  Recommend ID consult if fulminant or recurrent infection
<b>Diarrhea</b>	<i>Campylobacter</i> <i>E. coli</i> <i>Salmonella</i> <i>Shigella</i> <i>Yersinia</i>	Antibiotics should only be utilized for specific bacteria <u>after</u> a positive PCR <u>AND</u> if indicated  <u>Indications for antibiotics:</u> Age < 3 months Immunocompromised Extra-intestinal disease Severe disease  <a href="#">See page 27 if antibiotics indicated</a>			Antimotility agents should not be used because they have been shown to prolong symptomatology and may be associated with an increased risk of death  If < 3 months or toxic looking, obtain blood culture

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>Intra-abdominal infection (Community-acquired)</b>	Enteric gram negative bacilli Anaerobes	Ceftriaxone 50 mg/kg/dose IV q24h (max: 2000 mg/dose) PLUS Metronidazole 10 mg/kg/dose IV q8h (max: 500 mg/dose)	<u>ALLERGY:</u> Ciprofloxacin 10 mg/kg/dose IV q12h (max: 400 mg/dose) PLUS Metronidazole 10 mg/kg/dose IV q8h (max: 500 mg/dose)		
<b>Genitourinary Tract<sup>26-34</sup> For Sexually Transmitted Infections, only adolescent dosing is listed</b>					
<b>Bacterial vaginosis</b>	<i>G. vaginalis</i> <i>Ureaplasma</i> <i>Mycoplasma</i> Anaerobes	Metronidazole 500 mg PO q12h		7 days	
<b>Epididymitis</b>	<i>N. gonorrhoeae</i> <i>C. trachomatis</i> Enteric gram negative bacilli	Ceftriaxone 500 mg IM x 1 PLUS Doxycycline 100 mg PO q12h	<u>MSM:</u> Ceftriaxone 500 mg IM x 1 PLUS Levofloxacin 500 mg PO daily	Ceftriaxone – 1 dose Doxycycline – 10 days Levofloxacin – 10 days	
<b>Genital Herpes</b>	Herpes simplex virus (HSV)	<u>FIRST EPISODE:</u> Valacyclovir 1 g PO q12h OR Acyclovir 400 mg PO q8h  <u>RECURRENT EPISODES:</u> Valacyclovir 1 g PO q24h OR Acyclovir 800 mg PO BID		<u>FIRST EPISODE:</u> 7 – 10 days  <u>RECURRENT EPISODE:</u> 5 days	Make referral for recurrent infections to public health STI clinic: 217-789-2182

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>Pelvic inflammatory disease (PID)</b>	<i>N. gonorrhoeae</i> <i>C. trachomatis</i> Enteric gram negative bacilli GBS Anaerobes	<u>OUTPATIENT:</u> Ceftriaxone 500 mg IM x 1 PLUS Doxycycline 100 mg PO q12h PLUS Metronidazole 500 mg PO q12h  <u>INPATIENT:</u> Ceftriaxone 1g IV q24h PLUS Doxycycline 100 mg PO/IV q12h PLUS Metronidazole 500 mg PO/IV q12h	<u>ALLERGY:</u> Clindamycin 900 mg PO/IV q8h PLUS Gentamicin (pharmacy to dose)	14 days	Therapy may be changed to oral after clinical improvement (usually after 24 hours of treatment).
<b>Sexually transmitted infection (STI)</b>	<i>C. trachomatis</i> <i>N. gonorrhoeae</i>	<u>ADOLESCENT/ADULT:</u> Ceftriaxone 500 mg IM x 1 PLUS Doxycycline 100 mg PO q12h	<u>NON-COMPLIANCE OR &lt; 8 YEARS OF AGE:</u> Ceftriaxone 500 mg IM x 1 PLUS Azithromycin 1g PO x 1	Ceftriaxone – 1 dose  Azithromycin – 1 dose  Doxycycline – 7 days	Empirically treat both infections if suspicion of either infection
	Syphilis ( <i>Treponema pallidum</i> )	<u>PRIMARY / SECONDARY / EARLY LATENT (&lt; 1 YR DURATION):</u> Penicillin G Benzathine 50,000 units/kg/dose IM x 1 dose (max: 2.4 million units/dose)	<u>ALLERGY:</u> Doxycycline 100mg PO bid x 14 days*	One Dose	*Cannot use in pregnancy or congenital, neuro, or tertiary syphilis



Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
		<u>LATE LATENT / LATENT WITH UNKNOWN DURATION / TERTIARY WITH NORMAL CSF:</u> Penicillin G Benzathine 50,000 units/kg/dose IM once weekly x 3 doses (max: 2.4 million units/dose)		Once weekly x 3 doses	
		<u>NEUROSYPHILIS / OCULAR:</u> Penicillin G (Aqueous/ Parenteral) 50,000 units/kg/dose IV q4h (max: 4 million units/dose)		10 – 14 days	Consider PCN testing (Pre-Pen) or penicillin desensitization for penicillin allergy  Consider ID Consult
		<u>CONGENITAL SYPHILIS:</u> Penicillin G (Aqueous/ Parenteral) ≤ 7 days of age: 50,000 units/kg/dose IV q12h 8 – 28 days of age: 50,000 units/kg/dose IV q8h ≥ 1 month of age: 50,000 units/kg/dose IV q4 – 6h		10 days	Consider ID Consult
	Trichomoniasis ( <i>Trichomonas vaginalis</i> )	<u>Metronidazole</u> Men: 2000 mg PO x 1 Women: 500 mg PO q12h		Men: 1 dose  Women: 7 days	

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<b>Urinary tract infection (NOT Pyelonephritis)</b>	<i>E. coli</i> Enteric gram negative bacilli <i>S. saprophyticus</i> <i>Enterococcus</i>	<p><u>OUTPATIENT:</u></p> <p>&gt; 1 MONTH OF AGE: Cephalexin 25 mg/kg/dose PO q8h (max: 500 mg/dose)</p> <p>≥ 12 YEARS OF AGE: Nitrofurantoin 100mg PO q12h* OR Cephalexin 500mg PO BID</p> <p><u>INPATIENT:</u></p> <p>≤ 1 MONTH OF AGE: Ampicillin 25 mg/kg/dose IV q6h PLUS Gentamicin (pharmacy to dose)</p> <p>&gt; 1 MONTH OF AGE: Cefazolin 50 mg/kg/dose IV q8h (max 2000 mg/dose)</p> <p>COMPLICATED UTI**: Ceftazidime 50 mg/kg/dose IV q8h (max: 2000 mg/dose)</p>	<p><u>ALLERGY:</u></p> <p>TMP/SMX 5 mg/kg/dose trimethoprim component PO q12h (max: 160 mg trimethoprim/dose) OR Ciprofloxacin 10 mg/kg/dose PO/IV q12h (max: 500 mg/dose PO or 400 mg/dose IV)</p>	7 days	<p>*Avoid nitrofurantoin if pregnant, febrile, or pyelonephritis</p> <p>**Complicated UTI is defined as abnormal GU tract anatomy, indwelling catheter, or history of resistant organisms in urine cultures. Consider ID Consult.</p> <p>Oral therapy is preferred in patients &gt; 1 month old who are non-toxic and can tolerate oral therapy.</p> <p>Consider modifying antibiotics to include coverage of previous urine cultures</p>

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>Urinary tract infection, Pyelonephritis</b>	<i>E. coli</i> Enteric gram negative bacilli <i>Enterococcus</i>	<u>≤ 1 MONTH OF AGE:</u> Ampicillin 25 mg/kg/dose IV q6h PLUS Gentamicin (pharmacy to dose)  <u>&gt; 1 MONTH OF AGE:</u> Cefazolin 50 mg/kg/dose IV q8h (max 2000 mg/dose)  <u>STEP DOWN THERAPY:</u> Cephalexin 25 mg/kg/dose PO q8h (max: 500 mg/dose)  <u>COMPLICATED UTI*:</u> Ceftazidime 50 mg/kg/dose IV q8h (max: 2000 mg/dose)	<u>ALLERGY:</u> Ciprofloxacin 10 mg/kg/dose IV q8h (max: 400 mg/dose) OR Gentamicin IM/IV (pharmacy to dose)  <u>STEP DOWN THERAPY:</u> TMP/SMX 5 mg/kg/dose trimethoprim component PO q12h (max: 160 mg trimethoprim/dose) OR Ciprofloxacin 10 mg/kg/dose PO q12h (max: 500 mg/dose)	10 – 14 days	Consider modifying antibiotics to include coverage of previous urine cultures  *Complicated UTI is defined as abnormal GU tract anatomy, indwelling catheter, or history of resistant organisms in urine cultures. Consider ID Consult
<b>Respiratory tract, Ears/Nose/Throat Infections<sup>35-53</sup></b>					
<b>Aspiration pneumonia</b>	Oral flora	<u>OUTPATIENT:</u> Amoxicillin/clavulanate 45 mg/kg/dose amoxicillin component PO q12h (max: 875 mg amoxicillin/dose)  <u>INPATIENT:</u> Ampicillin/sulbactam 50 mg/kg/dose ampicillin component IV q6h (max: 2000 mg ampicillin/dose)	<u>ALLERGY:</u> Clindamycin 13 mg/kg dose IV q8h (max: 600 mg/dose)	7 days	

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<b>Community acquired pneumonia (CAP) (uncomplicated)</b>	<i>S. pneumoniae</i> <i>Mycoplasma pneumoniae</i>	<p><u>OUTPATIENT:</u>            PATIENTS WITH ≥ 2 DOSES HIB VACCINE:            Amoxicillin 30 mg/kg/dose PO q8h (max: 1000 mg/dose)</p> <p>PATIENTS WITH 0-1 DOSES HIB VACCINE:            Amoxicillin/clavulanate 30 mg/kg/dose PO q8h (max: 500/125 mg/dose q8h OR 875/125 mg/dose q12h)</p> <p><u>INPATIENT:</u>            PATIENTS WITH ≥ 2 DOSES HIB VACCINE:            Ampicillin 50 mg/kg/dose IV q6h (max: 2000 mg/dose)</p> <p>PATIENTS WITH 0-1 DOSES HIB VACCINE:            Ampicillin/sulbactam 50 mg/kg/dose ampicillin component IV q6h (max: 2000 mg ampicillin/dose)</p> <p><u>IF ATYPICAL PNEUMONIA SUSPECTED, ADD:</u>            Azithromycin: 10 mg/kg PO on day 1 (max: 500 mg/dose), followed by 5 mg/kg PO q24h on days 2 – 5 (max: 250 mg/dose)</p>	<p><u>ALLERGY TO PENICILLINS:</u>            Ceftriaxone 50 mg/kg/dose q24h (max: 2000 mg/dose)            OR            Cefprozil 15 mg/kg/dose PO q12h (max: 500 mg/dose)            OR            Levofloxacin            6 mo-4 years: 10 mg/kg/dose IV/PO q12h            ≥ 5 years: 10 mg/kg/dose IV/PO q24h (max: 750 mg/dose)</p>	5 – 7 days	Children receiving antibiotics outpatient that are being admitted for CAP should still be started on Ampicillin IV

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>CAP (complicated)</b>	<i>S. pneumoniae</i> <i>S. pyogenes</i> MSSA or MRSA	Ceftriaxone 75 mg/kg/dose IV q24h (max: 2000 mg/dose) PLUS Clindamycin 13 mg/kg dose IV q8h (max: 600 mg/dose)	<u>IF H/O MRSA COLONIZATION/ INFECTION:</u> Ceftriaxone 75 mg/kg/dose IV q24h (max: 2000 mg/dose) PLUS Vancomycin (pharmacy to dose)  <u>IF SEVERELY ILL, SEPTIC, IMPENDING RESPIRATORY FAILURE; OR INFLUENZA POSITIVE:</u> Ceftriaxone 75 mg/kg/dose IV q24h (max: 2000 mg/dose) PLUS Vancomycin (pharmacy to dose) PLUS Clindamycin 13 mg/kg dose IV q8h (max: 600 mg/dose)		Consider ID Consult  Complicated as defined by significant effusion, empyema, necrotizing pneumonia
<b>Dental abscess</b>	<i>Viridans streptococci</i> <i>Neisseria sp</i> <i>Eikenella sp</i> Anaerobes ( <i>Peptostreptococcus</i> , <i>Prevotella sp</i> )	<u>OUTPATIENT:</u> Amoxicillin/clavulanate 25 mg/kg/dose amoxicillin component PO q12h (max: 875 mg amoxicillin/dose)  <u>INPATIENT:</u> Ampicillin/sulbactam 50 mg/kg/dose ampicillin component IV q6h (max: 2000 mg/dose)	<u>ALLERGY:</u> Clindamycin 13mg/kg/dose IV/PO q8h (max: 600 mg/dose)	10 days	
<b>Hospital/Ventilator associated pneumonia (HAP/VAP)</b>	Gram negative organisms ( <i>Pseudomonas sp</i> , enteric gram negative) MSSA or MRSA	Cefepime 50 mg/kg IV q8h (max: 2000 mg/dose)	<u>IF TOXIC OR H/O MRSA COLONIZATION/ INFECTION:</u> ADD Vancomycin (pharmacy to dose)	7 days	Consider modifying antibiotics to include coverage of previous tracheal aspirate cultures

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
Influenza	Influenza	<p><u>TREATMENT</u>: Oseltamivir</p> <p>Infants &lt; 1 year: 3 mg/kg/dose PO q12h</p> <p>Children 1 – 12 years:  ≤ 15 kg: 30 mg PO q12h  16-23 kg: 45 mg PO q12h  24-40 kg: 60 mg PO q12h  &gt; 40 kg: 75 mg PO q12h</p> <p>Children &gt; 12 years:  75 mg PO BID</p> <p><u>PROPHYLAXIS</u>: Oseltamivir</p> <p>3 months – 1 year:  3 mg/kg PO q24h</p> <p>Children ≥ 1 – 12 years:  ≤ 15 kg: 30 mg PO q24h  16-23 kg: 45 mg PO q24h  24-40 kg: 60 mg PO q24h  &gt; 40 kg: 75 mg PO q24h</p> <p>Children &gt; 12 years:  75 mg PO q24h</p>		<p>TREATMENT: 5 days</p> <p>PROPHYLAXIS: 10 days</p>	Prophylaxis not recommended for infants less than 3 months of age

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>Mastoiditis</b>	<i>S. pneumoniae</i> <i>S. pyogenes</i> <i>H. influenzae</i> MSSA or MRSA	<u>ACUTE MASTOIDITIS:</u> Ceftriaxone 50 mg/kg/dose IV q24h (max: 2000 mg/dose) PLUS Clindamycin 13 mg/kg/dose IV q8h (max: 600 mg/day)  <u>INTRACRANIAL EXTENSION            OR VENOUS SINUS            THROMBOSIS:</u> Ceftriaxone 50 mg/kg/dose IV q12h (max: 2000 mg/dose) PLUS Vancomycin (pharmacy to dose) PLUS Metronidazole 7.5 mg/kg/dose IV/PO q6h (max: 500 mg/dose)  <u>CHRONIC MASTOIDITIS,            RECURRENT AOM, RECENT            ANTIBIOTICS (consider  <i>Pseudomonas</i> infection):</u> Ceftazidime 50 mg/kg/dose IV q8h (max: 2000 mg/dose) PLUS Clindamycin 13 mg/kg/dose IV q8h (max: 600 mg/dose)	<u>ALLERGY:</u> Meropenem 20 mg/kg/dose IV q8h (max: 2000 mg/dose) PLUS Vancomycin (pharmacy to dose)		Recommend ID consult

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>Otitis media, acute</b>	<i>S. pneumoniae</i> <i>M. catarrhalis</i> <i>H. influenzae</i> <i>S. pyogenes</i>	Amoxicillin 45 mg/kg/dose PO q12h (max: 1500 mg/dose) OR Amoxicillin/clavulanate 45 mg/kg/amoxicillin component PO q12h (max: 875 mg amoxicillin/dose)*	<u>ALLERGY:</u> Cefdinir 7 mg/kg/dose PO q12h (max: 300 mg/dose) OR Ceftriaxone 50 mg/kg IM/IV q24h for 1 or 3 days (max: 2000 mg/dose)	< 2 yrs or severe symptoms (any age): 10 days  2 – 5 years with mild-moderate symptoms: 7 days  ≥ 6 yrs with mild-moderate symptoms: 5 – 7 days	If ≥ 24 months of age without otorrhea: consider observation only  *Consider high-dose amoxicillin/clavulanate if treated with amoxicillin for AOM in past 30 days or with concomitant conjunctivitis
<b>Orbital cellulitis (post-septal)</b>	<i>S. pneumoniae</i> <i>Haemophilus spp.</i> <i>S. pyogenes</i> MRSA or MSSA <i>Streptococcus anginosus</i> Anaerobes	Ceftriaxone 50 mg/kg/dose IV q12h (max: 2000 mg/dose) PLUS Clindamycin 13 mg/kg/dose IV q8h (max: 600 mg/day)	<u>IF CONCERN FOR SIGHT-THREATENING INFECTION, TOXIC, MRSA COLONIZATION, OR CNS EXTENSION:</u> Vancomycin (pharmacy to dose) PLUS Ceftriaxone 50 mg/kg/dose IV q12h (max: 2000 mg/dose) PLUS Metronidazole 7.5 mg/kg/dose IV/PO q6h (max: 500 mg/dose)	14 – 21 days	Recommend ID consult  Obtain deep nasal culture prior to starting antibiotics
<b>Periorbital cellulitis (pre-septal)</b>	<i>S. pyogenes</i> MRSA or MSSA <i>S. pneumoniae</i>	<u>OUTPATIENT:</u> Amoxicillin/clavulanate 45 mg/kg/dose amoxicillin component PO q12h (max: 875 mg amoxicillin/dose)  <u>INPATIENT:</u> Ampicillin/sulbactam 50 mg/kg/dose ampicillin component IV q6h (max: 2000 mg ampicillin/dose)	<u>IF H/O MRSA COLONIZATION/ INFECTION OR HOUSEHOLD CONTACT WITH MRSA:</u> Clindamycin 13mg/kg/dose IV q8h (max: 600 mg/dose)  <u>IF TOXIC:</u> ADD Vancomycin (pharmacy to dose)	7 – 10 days	Obtain NP swab and send for MRSA culture



Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>Pertussis</b>	<i>Bordetella pertussis</i>	<u>Azithromycin</u> < 6 months: 10 mg/kg/dose PO q24h  ≥ 6 months: 10 mg/kg (max: 500 mg/dose) PO on day 1, then 5 mg/kg/dose (max: 250 mg/dose) q24h on days 2 – 5	<u>ALLERGY:</u> TMP/SMX 4 mg/kg/dose trimethoprim component PO q12h (max: 160 mg trimethoprim/dose)	Azithromycin: 5 days TMP/SMX: 14 days	May need postexposure prophylaxis for close contacts
<b>Pharyngitis</b>	<i>S. pyogenes</i>	Amoxicillin 50 mg/kg/dose PO q24h (max: 1000 mg/dose) OR Penicillin G Benzathine: < 27 kg: 600,000 units IM x 1 dose ≥ 27 kg: 1.2 million units IM x 1 dose	<u>ALLERGY:</u> Cephalexin 20 mg/kg/dose q12h (max: 500 mg/dose) OR Clindamycin 7 mg/kg/dose q8h (max: 300 mg/dose)	10 days	Do not test if < 3 years of age and/or viral URI symptoms present
<b>Retro- or parapharyngeal abscess</b>	Polymicrobial: <i>S. pyogenes</i> <i>S. anginosus</i> group <i>Haemophilus spp.</i> Oral anaerobes MRSA or MSSA	Ampicillin/sulbactam 50 mg/kg/dose ampicillin component IV q6h (max: 2000 mg/ ampicillin/dose)	<u>IF H/O MRSA OR ALLERGY:</u> Clindamycin 13 mg/kg/dose IV q8h (max: 600 mg/dose)  <u>IF TOXIC:</u> ADD Vancomycin (pharmacy to dose)	14 days	
<b>Sinusitis, acute</b>	<i>S. pneumoniae</i> <i>H. influenzae</i> <i>M. catarrhalis</i> <i>S. pyogenes</i>	<u>OUTPATIENT:</u> Amoxicillin/clavulanate 45 mg/kg/dose amoxicillin component PO q12h (max: 875 mg amoxicillin/dose)  <u>INPATIENT:</u> Ampicillin/sulbactam 50 mg/kg/dose ampicillin component IV q6h (max: 2000 mg ampicillin/dose)	<u>ALLERGY OR TREATMENT FAILURE:</u> Levofloxacin 10 mg/kg/dose PO q24h (max: 500 mg/dose)	7 – 10 days	Indication for antibiotics requires the presence of persistent nasal discharge or daytime cough <u>without evidence of clinical improvement for ≥ 10 days</u> . Consider watchful waiting in this scenario.

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>Tonsillar or peritonsillar abscess</b>	<i>S. pyogenes</i> <i>S. anginosus</i> group MSSA or MRSA Oral anaerobes Polymicrobial	Ampicillin/sulbactam 50 mg/kg/dose ampicillin component IV q6h (max: 2000 mg ampicillin/dose)	<u>IF H/O MRSA OR ALLERGY:</u> Clindamycin 13mg/kg/dose IV q8h (max: 600 mg/dose)  <u>IF TOXIC:</u> ADD Vancomycin (pharmacy to dose)	10 – 14 days	
<b>Tracheitis (intubated / tracheostomy patient)</b>	Gram negative organisms MSSA or MRSA	Cefepime 50 mg/kg IV q8h (max: 2000 mg/dose)	<u>ALLERGY:</u> Levofloxacin 6 mo-4 years: 10 mg/kg/dose IV/PO q12h ≥ 5 years: 10 mg/kg/dose IV/PO q24h (max: 750 mg/dose)  <u>IF TOXIC OR PRIOR HISTORY OF MRSA:</u> ADD Vancomycin (pharmacy to dose)	5 days	Consider modifying antibiotics to include coverage of previous tracheal aspirate cultures
<b>Tracheitis (non-intubated following croup-like illness)</b>	MSSA or MRSA <i>S. pyogenes</i> <i>S. pneumoniae</i> <i>H. influenzae</i>	Vancomycin (pharmacy to dose) PLUS Ceftriaxone 75 mg/kg/dose IV q24h (max: 2000 mg/dose)			Recommend ID consult
<b>Skin and Soft Tissue</b> <sup>54-57</sup>					
<b>Abscess</b>	MSSA or MRSA	Clindamycin 13mg/kg/dose IV/PO q8h (max: 600 mg/dose) OR TMP/SMX 5 mg/kg/dose trimethoprim component PO q12h (max: 160 mg trimethoprim/dose)	<u>ALLERGY:</u> Doxycycline 2 mg/kg/dose PO q12h dose (max: 100 mg/dose)  <u>IF TOXIC:</u> Vancomycin (pharmacy to dose)	Uncomplicated/drained: 5 days Complicated/undrained: 7 days	Send drainage for culture prior to starting antibiotics  Consider Surgery Consult for I&D

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>Cellulitis (nonpurulent)</b>	<i>S. pyogenes</i> MSSA or MRSA	Cefazolin 33 mg/kg/dose IV q8h (max: 2000 mg/dose) OR Cephalexin 15 mg/kg/dose PO q8h (max: 500 mg/dose)	<u>IF H/O MRSA OR ALLERGY:</u> Clindamycin 13mg/kg/dose IV/PO q8h (max: 600 mg/dose)  <u>IF TOXIC/SEVERE:</u> REFER TO NECROTIZING FASCITIS GUIDELINE BELOW	5 – 7 days	Obtain NP swab and send for MRSA culture
<b>Human Bite</b>	Polymicrobial: <i>E. corrodens</i> Oral anaerobes <i>Streptococci sp.</i> MSSA or MRSA	Amoxicillin/clavulanate 25 mg/kg/dose amoxicillin component PO q12h (max: 875 mg amoxicillin/dose) OR Ampicillin/sulbactam 50mg/kg/dose ampicillin component IV q6h (max: 2000 mg ampicillin/dose)	<u>ALLERGY:</u> Clindamycin 13 mg/kg/dose IV/PO q8h (max: 600 mg/dose) PLUS TMP/SMX 5 mg/kg/dose trimethoprim component PO q12h (max: 160 mg trimethoprim/dose)	Infected: 10 days Prophylaxis: 3 – 5 days  <u>PROPHYLAXIS INDICATIONS:</u>	Verify tetanus vaccine status  For animal bites: assess rabies risk
<b>Animal Bite</b>	Polymicrobial: <i>P. multocida</i> Oral anaerobes <i>E. corrodens</i> <i>Capnocytophaga sp.</i> <i>Streptococci sp.</i> MSSA or MRSA			<ul style="list-style-type: none"> <li>• Moderate or severe bite wounds, especially if edema or crush injury is present</li> <li>• Puncture wounds, especially if penetration of bone, tendon sheath, or joint</li> <li>• Deep or surgically closed facial bite wounds</li> <li>• Hand and foot bite wounds</li> <li>• Genital area bite wounds</li> <li>• Immunocompromised or asplenic</li> <li>• Cat bite wounds</li> </ul>	

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>Lymphadenitis, suppurative</b>	MSSA or MRSA <i>S. pyogenes</i>	Cefazolin 33 mg/kg/dose IV q8h (max: 2000 mg/dose)	<u>IF HIGH SUSPICION OF MRSA:</u> Clindamycin 13 mg/kg/dose IV/PO q8h (max: 600 mg/dose)  <u>IF TOXIC:</u> Vancomycin (pharmacy to dose)	7 – 10 days	If slow response or more severe infection, consider 14 days of treatment
<b>Necrotizing fasciitis</b>	<i>S. pyogenes</i> MSSA or MRSA Polymicrobial (mixed aerobes & anaerobes)	Vancomycin (pharmacy to dose) PLUS Cefepime 50 mg/kg/dose IV q8h (max: 2000 mg/dose) PLUS Metronidazole 7.5 mg/kg/dose IV q6h (max: 500 mg/dose) PLUS Clindamycin 13 mg/kg/dose IV q8h (max: 900 mg/dose)	<u>ALLERGY TO BETA-LACTAMS:</u> Vancomycin (pharmacy to dose) AND Meropenem 20 mg/kg/dose IV q8h (max: 1000 mg/dose) AND Clindamycin 13 mg/kg/dose IV q8h (max: 900 mg/dose)		Recommend ID and Surgery Consults
<b>Pyomyositis (Stage 2 or 3 with pus seen in the muscle tissue)</b>	MSSA or MRSA	Vancomycin (pharmacy to dose) PLUS Cefazolin 33 mg/kg/dose IV q8h (max: 2000 mg/dose)	<u>IF IMMUNOCOMPROMISED OR OPEN TRAUMA TO MUSCLES:</u> SUBSTITUTE Cefepime 50 mg/kg/dose IV q8h (max: 2000 mg/dose) for cefazolin		Recommend ID and Surgery Consults
<b>Staphylococcal scalded skin</b>	MSSA or MRSA	Cefazolin 33 mg/kg/dose IV q8h (max: 2000 mg/dose) OR Cephalexin 25 mg/kg/dose PO q12h (max: 500 mg/dose)	<u>IF H/O MRSA COLONIZATION/ INFECTION OR TOXIC:</u> Clindamycin 13mg/kg/dose IV q8h (max: 600 mg/dose)	10 days	Recommend ID consult

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>Surgical wound infection</b>	<u>Clean wound on trunk, head, neck, extremity:</u> MSSA or MRSA <i>S. pyogenes</i>	Cefazolin 33 mg/kg/dose IV q8h (max: 2000 mg/dose) OR Cephalexin 15 mg/kg/dose PO q8h (max: 500 mg/dose)	<u>IF H/O MRSA COLONIZATION/ INFECTION OR HOUSEHOLD CONTACT WITH MRSA:</u> Clindamycin 13mg/kg/dose IV q8h (max: 600 mg/dose)  <u>IF TOXIC:</u> Vancomycin (pharmacy to dose)		Obtain wound cultures prior to starting antibiotics
	<u>Axilla, GI, Perineum, Female genital tract:</u> MSSA or MRSA <i>S. pyogenes</i> Gram negatives Anaerobes	Ceftriaxone 75 mg/kg/dose IV/IM q24h (max: 2000 mg/dose) PLUS Metronidazole 7.5 mg/kg/dose IV q6h (max: 500 mg/dose)	<u>ALLERGY:</u> Ciprofloxacin 10 mg/kg IV/PO q12h (max: 400 mg/dose IV or 500 mg/dose PO) PLUS Metronidazole 7.5 mg/kg IV/PO q6h (max: 500 mg/dose)  <u>IF H/O MRSA COLONIZATION/ INFECTION OR HOUSEHOLD CONTACT WITH MRSA:</u> ADD Clindamycin 13mg/kg/dose IV q8h (max: 600 mg/dose)  <u>IF TOXIC:</u> ADD Vancomycin (pharmacy to dose)		
<b>Miscellaneous</b> <sup>58-66</sup>					

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>Febrile neutropenia (hematology/oncology patients)</b>	Gram negative bacilli (including <i>P. aeruginosa</i> ) Gram positive pathogens (including <i>S. aureus</i> , CONS, <i>Streptococcus</i> )	Ceftazidime 50mg/kg/dose IV q8h (max: 2000 mg/dose)	<u>IF TOXIC, PNEUMONIA, OR CELLULITIS:</u> ADD Vancomycin (pharmacy to dose)  <u>IF ABDOMINAL SYMPTOMS:</u> ADD Metronidazole 10 mg/kg/dose IV q8h (max: 500 mg/dose)  <u>IF AML OR RELAPSED ALL:</u> Cefepime 50 mg/kg/dose IV q8h (max: 2000 mg/dose)		
<b>Lemierre's Syndrome</b>	<i>Fusobacterium necrophorum</i> <i>Bacteroides sp.</i> <i>Peptostreptococcus</i> <i>S. aureus</i> <i>Streptococcus sp.</i>	Vancomycin (pharmacy to dose) PLUS Ceftriaxone 50 mg/kg/dose IV q12h (max: 2000 mg/dose) PLUS Metronidazole 7.5 mg/kg/dose IV q6h (max: 500 mg/dose)			Recommend ID Consult
<b>R/O Catheter-associated blood stream infection (CLABSI)</b>	MSSA or MRSA Coagulase Negative Staphylococcus (CONS) Enteric Gram negative bacilli	Vancomycin (pharmacy to dose) PLUS Ceftazidime 50 mg/kg/dose IV q8h (max: 2000 mg/dose)	<u>IF HISTORY OF SHORT GUT:</u> ADD Metronidazole 10 mg/kg/dose IV q8h (max: 500 mg/dose)		Recommend ID Consult  Obtain blood culture from central line AND periphery before starting antibiotics  Consider modifying antibiotics to include coverage of previous blood cultures

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>R/O Sepsis, 0 – 28 days (no central lines)</b>	<i>S. agalactiae</i> (GBS) <i>E. coli</i> <i>L. monocytogenes</i>	Ampicillin PLUS Gentamicin (see neonatal dosing guide)	<u>IF TOXIC OR CONCERNS FOR MENINGITIS (CSF WBC &gt;20):</u> Ampicillin PLUS Ceftazidime (see neonatal dosing guide)		Recommend ID consult if toxic or concern for meningitis  In all settings, ceftazidime preferred to gentamicin in children with known or suspected structural kidney disease
<b>R/O Sepsis, &gt; 1 month of age (no central lines and no concern for meningitis)</b>	<i>S. agalactiae</i> (GBS) <i>S. pneumoniae</i> <i>E. coli</i> <i>N. meningitidis</i> <i>S. pyogenes</i>	Ceftriaxone 50 mg/kg/dose q24h (max: 2000 mg/dose)	<u>IF TOXIC OR H/O MRSA:</u> ADD Vancomycin (pharmacy to dose)  <u>IF IMMUNOCOMPROMISED:</u> Cefepime 50 mg/kg/dose IV q8h (max: 2000 mg/dose) PLUS Vancomycin (pharmacy to dose)  <u>IF TOXIN-MEDIATED INFECTION SUSPECTED:</u> ADD Clindamycin 13 mg/kg/dose IV q8h (max: 900 mg/dose)		
<b>Sickle Cell Disease with Fever</b>	<i>S. pneumoniae</i> Gram negative enterics Salmonella <i>S. aureus</i> <i>Mycoplasma</i>	Ceftriaxone 50 mg/kg/dose IV q24h (max: 2000 mg/dose)*	<u>IF ACUTE CHEST SYNDROME SUSPECTED:</u> ADD Azithromycin 10 mg/kg PO on day 1 (max: 500 mg/dose), followed by 5 mg/kg/dose PO q24h on days 2 – 5 (max: 250 mg/dose)  <u>IF TOXIC OR H/O MRSA COLONIZATION/ INFECTION:</u> ADD Vancomycin (pharmacy to dose)		*Ceftriaxone may increase the risk of severe hemolysis in patients with sickle cell disease

Diagnosis	Common Pathogens	Preferred Empiric Drug(s)	Alternative Drug(s) for Allergy or Clinical Severity	Duration	Comments
<b>Tickborne Infections</b>	<i>Ehrlichia</i> <i>Rickettsia</i>	Doxycycline 2.2 mg/kg/dose PO/IV q12h (max: 100 mg/dose)		Patients should be treated for at least 3 days after fever subsides and until clinical improvement. Minimum course is 5 – 7 days.	Recommend ID consult
<b>Toxic shock syndrome</b>	<i>S. pyogenes</i> <i>S. aureus</i>	Vancomycin (pharmacy to dose) PLUS Cefazolin 33 mg/kg/dose IV q8h (max: 2000 mg/dose) PLUS Clindamycin 13 mg/kg/dose IV q8h (max: 900 mg/dose)			Recommend ID consult



## PEDIATRIC DOSING RECOMMENDATIONS

<b>EXTENDED INTERVAL AMINOGLYCOSIDE DOSING (age &gt; 30 days only) **preferred dosing method**</b>	
<b>Cystic Fibrosis</b>	
Drug	Daily Dose
Gentamicin / Tobramycin Age ≥ 1 month	10 mg/kg IV q24h
Amikacin Age ≥ 1 month	30 mg/kg IV q24h
<b>Non-Cystic Fibrosis</b>	
Drug	Daily Dose
Gentamicin / Tobramycin Age 3 months to < 2 years Age 2 years to < 8 years Age ≥ 8 years	9.5 mg/kg IV q24h 8.5 mg/kg IV q24h 7 mg/kg IV q24h
Amikacin Age ≥ 1 month	15 mg/kg IV q24h
<b>Urinary Tract Infection</b>	
Drug	Daily Dose
Gentamicin / Tobramycin Age 1 month to < 5 years Age 5 years to < 10 years Age ≥ 10 years	7.5 mg/kg IV q24h 6 mg/kg IV q24h 5 mg/kg IV q24h

\*Check peak and trough if therapy continues > 48 hours

### **Vancomycin**

Vancomycin is dosed and managed by pharmacy. To order vancomycin, please order "Pharmacy to dose vancomycin panel" in EPIC. Pharmacy will use pharmacokinetic software to determine a patient-specific dosing and monitoring plan.

<b>CONVENTIONAL AMINOGLYCOSIDE DOSING (age &gt; 30 days)</b>		
Drug	Dose (mg/kg)	Interval (hours)
Gentamicin / tobramycin	2.5	8
Amikacin	5 – 7.5	8
Gentamicin synergy	1 – 2	8

\*Check peak and trough if therapy continues > 48 hours

<b>CONVENTIONAL AMINOGLYCOSIDE DOSING (neonates)</b>			
<b>Gentamicin / Tobramycin</b>			
PMA (weeks)	Postnatal (days)	Dose (mg/kg)	Interval (hours)
30 to 34	0 to 7	4.5	36
	≥ 8	4	24
≥ 35	ALL	4	24
<b>Amikacin</b>			
PMA (weeks)	Postnatal (days)	Dose (mg/kg)	Interval (hours)
30 to 34	0 to 7	18	36
	≥ 8	15	24
≥ 35	ALL	15	24

\*Check peak and trough if therapy continues > 72 hours

## NEONATAL DOSING RECOMMENDATIONS

<b>Ampicillin IV – Bacteremia</b>		
Gestational Age (weeks)	Postnatal age	
	≤ 7 days	> 7 days
≤ 34	50 mg/kg/dose q12h	75 mg/kg/dose q12h
> 34	50 mg/kg/dose q8h	50 mg/kg/dose q8h

<b>Ampicillin IV – Meningitis</b>	
Postnatal age (days)	Dosage
≤ 7	100 mg/kg/dose q8h
> 7	75 mg/kg/dose q6h

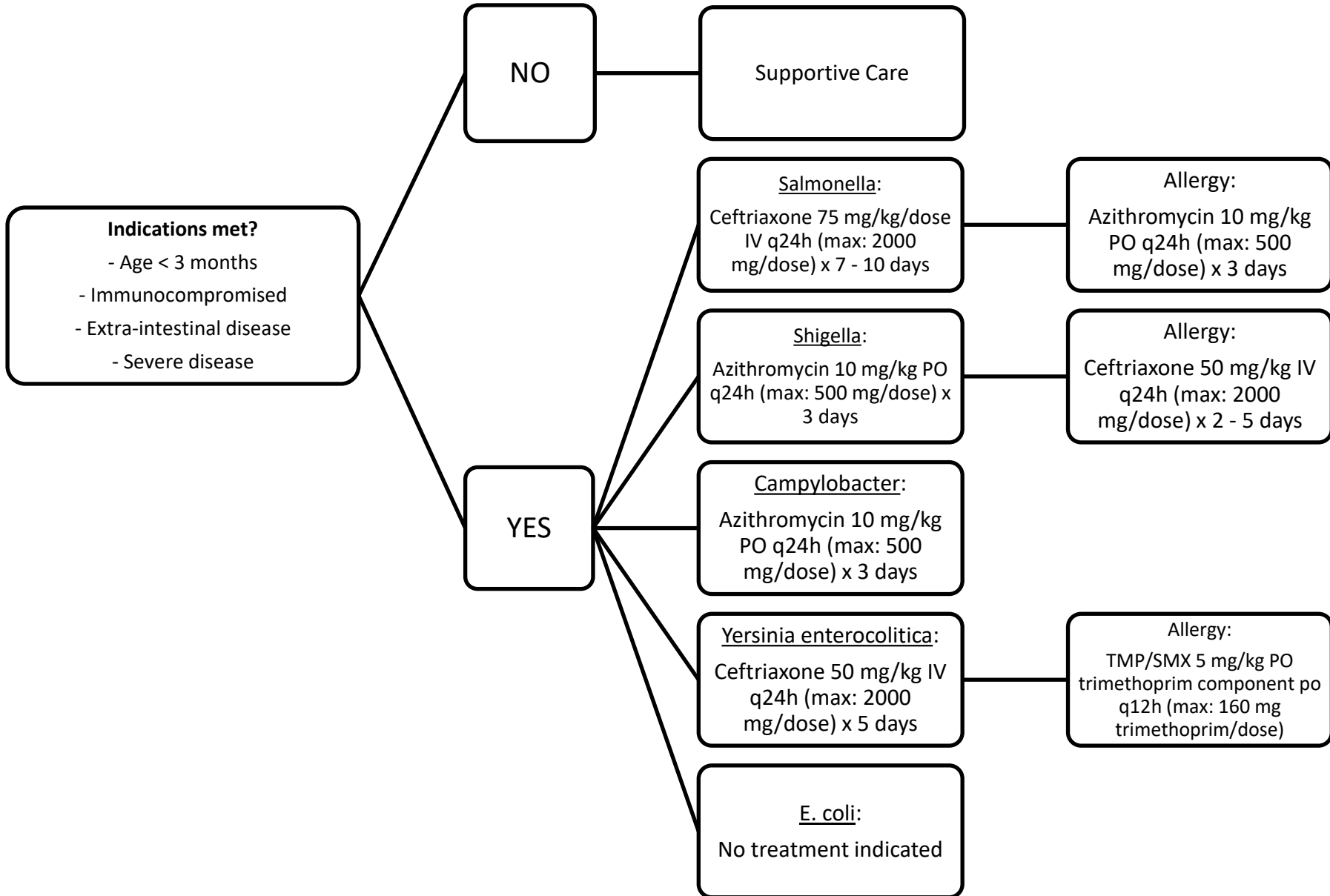
<b>Gentamicin: IV</b>			
Postmenstrual age (weeks)	Postnatal age (days)	Dose (mg/kg)	Interval
≤ 29	0 – 7	5	q 48 hr
	8 – 28	4	q 36 hr
	≥ 29	4	q 24 hr
30 – 34	0 – 7	4.5	q 36 hr
	≥ 8	4	q 24 hr
≥ 35	All	4	q 24 hr

<b>Ceftazidime:</b>		
Regular dosing: 30 mg/kg/dose IV		
Meningitis dosing: 50 mg/kg/dose IV		
Postmenstrual age (weeks)	Postnatal age (days)	Interval
≤ 29	0 – 28	q 12 hr
	> 28	q 8 hr
30 – 36	0 – 14	q 12 hr
	> 14	q 8 hr
37 – 44	0 – 7	q 12 hr
	> 7	q 8 hr
≥ 45	All	q 8 hr

<b>Vancomycin: 15 mg/kg/dose IV</b>		
Postmenstrual age (weeks)	Postnatal age (days)	Interval
≤ 29	All	q 12 hr
30 – 36	0 – 14	q 12 hr
	> 14	q 8 hr
37 – 44	0 – 7	q 12 hr
	> 7	q 8 hr
≥ 45	All	q 6 hr

<b>Oxacillin: 25 mg/kg/dose IV</b>		
Postmenstrual age (weeks)	Postnatal age (days)	Interval
≤ 29	0 – 28	q 12 hr
	> 28	q 8 hr
30 – 36	0 – 14	q 12 hr
	> 14	q 8 hr
37 – 44	0 – 7	q 12 hr
	> 7	q 8 hr
≥ 45	All	q 6 hr

**TREATMENT OF INFECTIOUS DIARRHEA**



## References:

1. Gosselin RA, Roberts I, Gillespie WJ. Antibiotics for preventing infection in open limb fractures. *Cochrane Database Syst Rev* 2004;CD003764.
2. Hauser CJ, Adams CA, Jr., Eachempati SR, Council of the Surgical Infection S. Surgical Infection Society guideline: prophylactic antibiotic use in open fractures: an evidence-based guideline. *Surg Infect (Larchmt)* 2006;7:379-405.
3. Hoff WS, Bonadies JA, Cachecho R, Dorlac WC. East Practice Management Guidelines Work Group: update to practice management guidelines for prophylactic antibiotic use in open fractures. *J Trauma* 2011;70:751-4.
4. Lee J. Efficacy of cultures in the management of open fractures. *Clin Orthop Relat Res* 1997:71-5.
5. Zalavras CG, Patzakis MJ, Holton PD, Sherman R. Management of open fractures. *Infect Dis Clin North Amer.* 2005; 19(4):915-29.
6. Velmahos GC, Toutouzas KG, Sarkisyan G, et al. Severe trauma is not an excuse for prolonged antibiotic prophylaxis. *Arch Surg* 2002;137:537-41.
7. Sprueiell MD, Searns JB, Heare TC. Clinical Care Guideline for improving Pediatric Acute Musculoskeletal infection Outcomes. *Journal Ped Inf Dis Soc*, 2017; 00(00):1-8.
8. Arnold JC, Bradley JS. Osteoarticular infections in Children. *Infect Dis Clin N Am.* 2015;29:557-574.
9. Woods CR, Bradley JS, Chatterjee A, et al. 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. *JPIDS.* 2021; 10(8):801-844.
10. Matuschek E, Ahman J. Antimicrobial susceptibility testing of *Kingella Kingae* with broth microdilution and disk diffusion using EUCAST recommended media. *Clin Microbiol Infect* 2017. S1198-743X(17) 30403-2.
11. Harrison CJ. Focal suppurative infections of the nervous system. In: *Principles and Practice of Pediatric Infectious Diseases.* 5<sup>th</sup> ed. Philadelphia, PA; Elsevier, Inc;2018:329-339.
12. Tunkel AR, Hartman BJ, Kaplan SL, et al. Practice guidelines for the management of bacterial meningitis. *Clin Infect Dis.* 2004;39:1267-84.
13. Van de Beek D, Cabellos C, Dzapova O, et al. ESCMID guideline: diagnosis and treatment of acute bacterial meningitis. *Clin Microbiol Infect* 2016;22:S37-S62.
14. American Academy of Pediatrics. Herpes simplex. In: Kimberlin DW, Barnett ED, Lynfield R, Sawyer MH. *Red Book: 2021 – 2024 Report of the Committee on Infectious Diseases;* 2021:407-417.
15. Solomkin JS, Mazuski JE, Bradley JS, et al. Diagnosis and management of complicated intra-abdominal infection in adults and children: guidelines by the Surgical Infection Society and the Infectious Diseases Society of America. *Clin Infect Dis* 2010;50:133-64.
16. Hurst AL, Olson D, Somme S, et al. Once-daily ceftriaxone plus metronidazole versus ertapenem and/or ceftioxin for pediatric appendicitis. *J Pediatric Infect Dis Soc.* 2017;6(1):57-64.
17. Litovitz T, Whitaker N, Clark L, et al. Emerging battery-ingestion hazard: clinical implications. *Pediatrics* 2010;125:1168-1177.
18. Kramer RE, Lerner DG, Lin T, et al. Management of ingested foreign bodies in children: a clinical report of the NASPGHAN endoscopy committee. *J Pediatr Gastroenterol Nutr.* 2015;60:562-574.
19. McDonald LC, Gerding DN, Johnson S, et al. Clinical practice guidelines for *Clostridium difficile* infection in adults and children: 2017 update by the infectious diseases society of America (IDSA) and the society for healthcare epidemiology of America (SHEA). *Clin Infect Dis.* 2018;66(7):1-48.
20. Shane AL, Mody RK, Crump JA, et al. 2017 infectious diseases society of America clinical practice guidelines for the diagnosis and management of infectious diarrhea. *Clin Infect Dis.* 2017;65(12):45-80.
21. American Academy of Pediatrics. Salmonella Infections. In: Kimberlin DW, Barnett ED, Lynfield R, Sawyer MH. *Red Book: 2021 – 2024 Report of the Committee on Infectious Diseases;* 2021:655-663.
22. American Academy of Pediatrics. *Campylobacter* Infections. In: Kimberlin DW, Barnett ED, Lynfield R, Sawyer MH. *Red Book: 2021 – 2024 Report of the Committee on Infectious Diseases;* 2021:243-246.
23. American Academy of Pediatrics. *Shigella* Infections. In: Kimberlin DW, Barnett ED, Lynfield R, Sawyer MH. *Red Book: 2021 – 2024 Report of the Committee*

- on Infectious Diseases; 2021:668-672.
24. American Academy of Pediatrics. *Yersinia enterocolitica* and *Yersinia pseudotuberculosis* Infections. In: Kimberlin DW, Barnett ED, Lynfield R, Sawyer MH. Red Book: 2021 – 2024 Report of the Committee on Infectious Diseases; 2021:851-854.
  25. American Academy of Pediatrics. *Escherichia coli* Diarrhea. In: Kimberlin DW, Barnett ED, Lynfield R, Sawyer MH. Red Book: 2021 – 2024 Report of the Committee on Infectious Diseases; 2021:322-328.
  26. Workowski KA, Bachmann LH, Chan PA, et al. Sexually transmitted infections treatment guidelines, 2021. *MMWR Recomm Rep* 2021;70:1-187.
  27. American Academy of Pediatrics. Sexually Transmitted Infections. In: Kimberlin DW, Barnett ED, Lynfield R, Sawyer MH. Red Book: 2021 – 2024 Report of the Committee on Infectious Diseases; 2021:898-905.
  28. American Academy of Pediatrics. Pelvic Inflammatory Disease. In: Kimberlin DW, Barnett ED, Lynfield R, Sawyer MH. Red Book: 2021 – 2024 Report of the Committee on Infectious Diseases; 2021:574-578.
  29. American Academy of Pediatrics. Syphilis. In: Kimberlin DW, Barnett ED, Lynfield R, Sawyer MH. Red Book: 2021 – 2024 Report of the Committee on Infectious Diseases; 2021:729-744.
  30. Gupta K, Hooton TM, Naber KG, et al. International clinical practice guidelines for the treatment of acute uncomplicated cystitis and pyelonephritis in women: A 2010 update by the Infectious Diseases Society of America and the European Society for Microbiology and Infectious Diseases. *Clin Infect Dis* 2011;52:e103-20.
  31. Subcommittee on Urinary Tract Infection SCoQI, Management, Roberts KB. Urinary tract infection: clinical practice guideline for the diagnosis and management of the initial UTI in febrile infants and children 2 to 24 months. *Pediatrics* 2011;128:595-610.
  32. Wald ER. Cystitis and Pyelonephritis. In: Cherry JD, Harrison GJ, Kaplan SL, Steinbach WJ, Hotez PJ. Feigin and Cherry's Textbook of Pediatric Infectious Diseases. 8<sup>th</sup> ed. Philadelphia, PA; Elsevier, Inc; 2019:395-408.
  33. Raszka Jr WV, Khan O. Pyelonephritis. *Pediatr Rev.* 2005;26(10):358-364.
  34. Strohmeier Y, Hodson EM, Willis NS, et al. Antibiotics for acute pyelonephritis in children. *Cochrane Database Syst Rev.* 2014;(7).
  35. Tebruegge M, Curtis N. Infections of the upper and middle airways. In: Principles and Practice of Pediatric Infectious Diseases. 5<sup>th</sup> ed. Philadelphia, PA; Elsevier, Inc;2018:208-215.
  36. Bradley JS, Byington CL, Shah SS, et al. The management of community-acquired pneumonia in infants and children older than 3 months of age: clinical practice guidelines by the Pediatric Infectious Diseases Society and the Infectious Diseases Society of America. *Clin Infect Dis* 2011;53:e25-76.
  37. Messinger AI, Kupfer O, Hurst A, et al. Management of pediatric community-acquired bacterial pneumonia. *Pediatr Rev.* 2017;38(9):394-409.
  38. Shaw J. Infections of the Oral Cavity. In: Principles and Practice of Pediatric Infectious Diseases. 5<sup>th</sup> ed. Philadelphia, PA; Elsevier, Inc;2018:193-199.
  39. Kalil AC, Metersky ML, Klompas M, et al. Management of adults with hospital-acquired and ventilator-associated pneumonia: 2016 clinical practice guidelines by the infectious diseases society of America and the American thoracic society. *Clin Infect Dis.* 2016;63(5):e61-e111.
  40. Gould JM, Coffin SE. Healthcare-Associated Infections. In: Principles and Practice of Pediatric Infectious Diseases. 5<sup>th</sup> ed. Philadelphia, PA; Elsevier, Inc;2018:592-600.
  41. Influenza. Centers for Disease Control and Prevention. <https://www.cdc.gov/flu/professionals/index.htm>. Accessed on January 2019.
  42. Psarommatis IM, Voudouris C, Douros K, Giannakopoulos P, Bairamis T, Carabinos C. Algorithmic management of pediatric acute mastoiditis. *Int J Pediatr Otorhinolaryngol* 2012;76:791-6.
  43. Wald ER, Conway JH. Mastoiditis. In: Principles and Practice of Pediatric Infectious Diseases. 5<sup>th</sup> ed. Philadelphia, PA; Elsevier, Inc;2018:225-230.
  44. Cherry JD, Vahabzadeh-Hagh AM, Shapiro NL. Mastoiditis. In: Cherry JD, Harrison GJ, Kaplan SL, eds. Feigin and Cherry's Textbook of Pediatric Infectious Diseases. 8<sup>th</sup> ed. Philadelphia, PA: Elsevier Saunders; 2019:17; 169-175.
  45. Lieberthal AS, Carroll AE, Chonmaitree T, et al. The diagnosis and management of acute otitis media. *Pediatrics* 2013;131:e964-99.
  46. Wald ER. Preseptal and orbital infections. In: Principles and Practice of Pediatric Infectious Diseases. 5<sup>th</sup> ed. Philadelphia, PA; Elsevier, Inc;2018:517-522.

47. Bhatt A. Ocular Infections. In: Cherry JD, Harrison GJ, Kaplan SL, eds. Feigin and Cherry's Textbook of Pediatric Infectious Diseases. 8th ed. Philadelphia, PA: Elsevier Saunders; 2019:17; 578-579.
48. Chow AW, Benninger MS, Brook I, et al. IDSA clinical practice guideline for acute bacterial rhinosinusitis in children and adults. Clin Infect Dis 2012;54:e72-e112.
49. Shulman ST, Bisno AL, Clegg HW, et al. Clinical practice guideline for the diagnosis and management of group A streptococcal pharyngitis: 2012 update by the Infectious Diseases Society of America. Clin Infect Dis 2012;55:e86-102.
50. Sichel JY, Dano I, Hocwald E, Biron A, Eliashar R. Nonsurgical management of parapharyngeal space infections: a prospective study. Laryngoscope 2002;112:906-10.
51. Broughton RA. Nonsurgical management of deep neck infections in children. Pediatr Infect Dis J 1992;11:14-8.
52. Tamma PD, Turnbull AE, Milstone AM, Lehmann CU, Sydnor ER, Cosgrove SE. Ventilator-associated tracheitis in children: does antibiotic duration matter? Clin Infect Dis 2011;52:1324-31.
53. American Academy of Pediatrics. Pertussis (Whooping Cough) In: Kimberlin DW, Barnett ED, Lynfield R, Sawyer MH. Red Book: 2021 – 2024 Report of the Committee on Infectious Diseases; 2021:578-589.
54. 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;59:147-59.
55. American Academy of Pediatrics. Pasteurella infections. In: Kimberlin DW, Barnett ED, Lynfield R, Sawyer MH. Red Book: 2021 – 2024 Report of the Committee on Infectious Diseases; 2021:556-567.
56. Epidemiology and Prevention of Vaccine-Preventable Diseases. The Pink Book 13<sup>th</sup> ed. 2015.  
<http://www.cdc.gov/vaccines/pubs/pinkbook/tetanus.html#wound>.
57. Myers A. Localized Lymphadenitis, Lymphadenopathy, and Lymphangitis. In: Principles and Practice of Pediatric Infectious Diseases. 5<sup>th</sup> ed. Philadelphia, PA; Elsevier, Inc;2018:161.
58. Freifeld AG, Bow EJ, Sepkowitz KA, et al. Clinical practice guideline for the use of antimicrobial agents in neutropenic patients with cancer: 2010 update by the infectious diseases society of America. Clin Infect Dis 2011;52:e56-93.
59. Danzinger-Isakov L, Rosen DA, Burns JL, Hunstad DA. Infectious Complications in Special Hosts. In: Principles and Practice of Pediatric Infectious Diseases. 5<sup>th</sup> ed. Philadelphia, PA; Elsevier, Inc; 2018:643-651.
60. Rellosa N, Vodzak J. Fusobacterium Species. In: Principles and Practice of Pediatric Infectious Diseases. 5<sup>th</sup> ed. Philadelphia, PA; Elsevier, Inc; 2018:1015-1018.
61. Mermel LA, Allon M, Bouza E, et al. Clinical practice guidelines for the diagnosis and management of intravascular catheter- related infection: 2009 Update by the Infectious Diseases Society of America. Clin Infect Dis 2009;49:1-45.
62. Pantell RH, Roberts KB, Adams WG, et al. Evaluation and Management of Well-Appearing Febrile Infants 8 to 60 days old. Pediatrics. 2021;148(2):e2021052228
63. Guzman-Cottrill JA, Vaz LE. The Systemic Inflammatory Response Syndrome (SIRS), Sepsis, and Septic Shock. In: Principles and Practice of Pediatric Infectious Diseases. 5<sup>th</sup> ed. Philadelphia, PA; Elsevier, Inc;2018:100.
64. Nizet V, O.Klein J. Bacterial Sepsis and Meningitis. In: Infectious Diseases of the Fetus and Newborn Infant. 8<sup>th</sup> ed. Elsevier Saunders. 2016:217-271.
65. Tickborne Diseases of the United States <https://www.cdc.gov/ticks/tickbornediseases/index.html>. Accessed January 23, 2019.
66. Suen J. Toxic Shock Syndrome. In: Feigin and Cherry's Textbook of Pediatric Infectious Diseases. 8th ed. Philadelphia, PA: Elsevier Saunders; 2019:17;616-624.

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