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Infectious Disease Syndrome	Pathogens	First line treatment	Alternative therapy (when needed for allergy)	Duration	Notes
Central Nervous System (CNS)					
Intracranial suppurative infections (brain abscess, epidural or subdural empyema) (including intracranial extension of mastoiditis/sinusitis)	<i>Streptococcus anginosus</i> group, Gram negatives, Anaerobes, MSSA or MRSA	Vancomycin per pharmacy + Ceftriaxone 50mg/kg/dose IV q12h (max: 2000 mg/dose) + Metronidazole 10 mg/kg/dose IV q8h (max: 500 mg/dose)	Vancomycin per pharmacy + Meropenem 40 mg/kg/dose IV q8h (max: 2000mg/dose)  OR  Vancomycin per pharmacy + Aztreonam 30 mg/kg/dose (max 2000 mg/dose) IV q6h + Metronidazole 10 mg/kg/dose (max 500 mg/dose) IV q8h	Anticipated 4 – 8 weeks (final based on ID recommendations)	ID consult recommended
CSF shunt infections	Coagulase negative staphylococci (CoNS), <i>Staphylococcus aureus</i> , gram-negative rods GNRs (including <i>Pseudomonas aeruginosa</i> ), <i>Cutibacterium acnes</i>	Vancomycin per pharmacy + Cefepime 50 mg/kg/dose IV q8h (max: 2000 mg/dose)	Vancomycin per pharmacy + Meropenem 40 mg/kg/dose IV (max: 2000 mg/dose)	Based on pathogen + ID recommendations: (durations below are for uncomplicated cases)  <i>C. acnes</i> : 10 days CoNS: 10-14 days <i>S.aureus</i> : 10-14 days GNRs: 21 days	ID consult recommended
Meningitis ≤ 28 days of age, community onset	Group B streptococcus, Enteric gram-negatives, <i>Listeria monocytogenes</i> , Herpes simplex virus	Ampicillin IV (dose based on gestational age) + Cefepime/Ceftriaxone IV <sup>a</sup> (dose based on gestational age) ± Acyclovir 20 mg/kg/dose IV q8h empirically, if positive epidemiologic and/or clinical risk factors <sup>b</sup>		Based on pathogen + ID recommendations: (durations below are for uncomplicated cases)  <i>N.meningitidis</i> : 5-7 days <i>H.influenzae</i> : 7-10 days <i>S.pneumoniae</i> : 10- 14 days <i>S.agalactiae</i> (GBS): 14 days Gram- negative bacilli: 21 days	ID consult recommended <sup>a</sup> Ceftriaxone: May be considered in neonates ≥ 32 weeks GA and ≥ 21 days postnatal age without hyperbilirubinemia or any anticipated calcium containing solutions within 48 hours of ceftriaxone therapy.  <sup>b</sup> Consider IV acyclovir if risk factors for HSV exist (maternal history of HSV genital lesions) or otherwise clinically indicated (seizures, hypothermia,

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					mucous membrane ulcers, vesicular rash, leukopenia, thrombocytopenia, elevated ALT, coagulopathy, CSF pleocytosis, etc.)
Meningitis > 28 days of age, community onset	<i>Streptococcus pneumoniae</i> , <i>Neisseria meningitidis</i> , <i>Haemophilus influenzae</i>	Vancomycin per pharmacy + Ceftriaxone 50 mg/kg/dose IV q12h (max: 2000 mg/dose)	Vancomycin per pharmacy + Meropenem 40 mg/kg/dose IV q8h (max: 2000 mg/dose)		
<b>Head, Eyes, Ears, Nose, and Throat (HEENT)</b>					
Acute Otitis Media (AOM)	<i>Streptococcus pneumoniae</i> , nontypeable <i>Haemophilus influenzae</i> , <i>Moraxella catarrhalis</i>	Amoxicillin 45 mg/kg/dose PO q12h (max: 2000 mg/dose)  Consider high -dose amoxicillin-clavulanate 45mg/kg/dose amoxicillin component q12h <sup>c</sup> if treated with amoxicillin for AOM in past 30 days or with concomitant conjunctivitis, or with no improvement in initial 48-72h	Cefpodoxime 5 mg/kg/dose PO q 12h (note. 3 <sup>rd</sup> gen oral cephalosporins achieve poor concentrations in middle ear to be truly effective hence high-risk patients, including those with cochlear implants, generally warrant ceftriaxone)  <i>Ceftriaxone 50 mg/kg/dose IV or IM in a single dose (3 doses if treatment failure). Ceftriaxone indicated only after failure of amoxicillin-clavulanate or oral third-generation cephalosporin or in patient who is truly intolerant of oral antibiotics)</i>	<2yrs or severe symptoms (any age): 10 days  2-5yrs: 7 days  > 6yrs: 5 days	<sup>c</sup> High-dose amoxicillin-clavulanate should be dosed using the ES-600 (600mg/5ml) formulation to minimize GI side effects Maximum Amoxicillin-Clavulanate dose in children ≥40kg: 2000mg amoxicillin component PO BID using the 1000mg/62.5 XR tablet formulation
Mastoiditis (For intracranial extension, refer to choices for intracranial suppurative infections)	<i>Streptococcus pneumoniae</i> , <i>Streptococcus pyogenes</i> , <i>Staph aureus (MSSA and MRSA)</i> , <i>Haemophilus influenzae</i>  <u>Also consider for chronic:</u> microaerophilic streptococci <i>Fusobacterium</i> <i>Pseudomonas aeruginosa</i>	Ampicillin-sulbactam 50 mg/kg/dose ampicillin component IV q6h (max: 2000 mg/dose) OR <sup>c</sup> Amoxicillin-clavulanate 45 mg/kg/dose amoxicillin component PO q12h  <u>If follows chronic or recurrent otitis media</u>	Ceftriaxone 50 mg/kg/dose po q 24h (max: 2000 mg/dose) OR Clindamycin 10 mg/kg/dose IV/PO q8h (max IV: 900 mg/dose; max PO: 1800 mg PER DAY, consider dividing doses over 450 mg/dose) OR Levofloxacin	Acute: 2-4 weeks depending on adequate debridement, intracranial extension, extent of osteomyelitis, associated thrombosis  Chronic: per ID consult	ID consult recommended.

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		Cefepime 50mg/kg/dose IV q8h (max 2000 mg/dose) OR Levofloxacin <u>6 mo-4 years:</u> 10 mg/kg/dose IV/PO q12h (max: 750 mg daily) <u>≥ 5 years:</u> 10 mg/kg/dose IV/PO q24h (max: 750 mg/dose)	<u>6 mo-4 years:</u> 10 mg/kg/dose IV/PO q12h (max: 750 mg daily) <u>≥ 5 years:</u> 10 mg/kg/dose IV/PO q24h (max: 750 mg/dose)		
Acute Bacterial Sinusitis	<i>Streptococcus pneumoniae, Haemophilus influenzae, Moraxella catarrhalis</i>	Ampicillin-sulbactam 50 mg/kg/dose ampicillin component IV q6h (max: 2000 mg/dose) OR Amoxicillin-clavulanate 45 mg/kg/dose amoxicillin component PO q12h	Clindamycin 10 mg/kg/dose IV/PO q8h (max IV: 900 mg/dose; max PO: 1800 mg PER DAY, consider dividing doses over 450 mg/dose) OR Levofloxacin <u>6 mo-4 years:</u> 10 mg/kg/dose IV/PO q12h (max: 750 mg daily) <u>≥ 5 years:</u> 10 mg/kg/dose IV/PO q24h (max: 750 mg/dose)	5-7 days	
Preseptal cellulitis	<i>Streptococcus pyogenes, Staphylococcus aureus (MSSA or MRSA)</i>	Ampicillin-sulbactam 50 mg/kg/dose ampicillin component IV q6h (max: 2000 mg/dose) OR Amoxicillin-clavulanate 45 mg/kg/dose amoxicillin component PO q12h	Clindamycin 10 mg/kg/dose IV/PO q8h (max IV: 900 mg/dose; max PO: 1800 mg PER DAY, consider dividing doses over 450 mg/dose)	5-7 days	
Orbital Cellulitis	<i>Staphylococcus aureus, Streptococcus pneumoniae, Anaerobes, Streptococcus anginosus, Haemophilus influenzae, Moraxella catarrhalis, Streptococcus pyogenes</i>	Ampicillin-sulbactam 50 mg/kg/dose ampicillin component IV q6h (max: 2000 mg/dose)  Severe (concern for abscess or not improving on empiric therapy): consider addition of vancomycin (dose per pharmacy)	Clindamycin 10 mg/kg/dose IV/PO q8h (max IV: 900 mg/dose; max PO: 1800 mg PER DAY, consider dividing doses over 450 mg/dose)	Anticipated 10-14 days  May extend to 3-4 weeks if extensive bone involvement, discuss with ID	ID consult recommended

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Retropharyngeal abscess/parapharyngeal abscess/peritonsillar abscess	Staphylococcus aureus (MSSA or MRSA), Streptococcus pyogenes, anaerobes, Haemophilus influenzae (often polymicrobial)	Ampicillin-sulbactam 50 mg/kg/dose ampicillin component IV q6h (max: 2000 mg/dose) OR Amoxicillin-clavulanate 45 mg/kg/dose amoxicillin component PO q12h	Clindamycin 10 mg/kg/dose IV/PO q8h (max IV: 900 mg/dose; max PO: 1800 mg PER DAY, consider dividing doses over 450 mg/dose)	14 days  Longer duration of therapy may be required for complex infections with insufficient source control	ID consult recommended
Gastrointestinal / Abdominal					
Appendicitis	Enteric Gram-negative bacilli, Streptococcus anginosus group, Anaerobes	Refer to ValU Pediatric Appendicitis Care Pathway			
C. difficile infection	C. difficile	Vancomycin 10 mg/kg/dose PO q6h (max 125 mg/dose) OR Metronidazole 7.5 mg/kg/dose PO q6-8h (max 500 mg/dose)  Severe/fulminant disease: Vancomycin PO or per rectal PLUS Metronidazole IV (doses as above and consult ID)		10 days for initial episode or first recurrence	ID consult recommended for severe/fulminant disease and for second or subsequent recurrences Avoid testing under 1 year of age Obtain test only if ≥3 watery stools in past 24 hours + no laxatives in 48 hours Discontinue offending antibiotics if possible Do not order test of cure
Uncomplicated Intra-abdominal infection, community onset	Enterobacterales, Bacteroides spp	Ceftriaxone 50 mg/kg/dose IV q24h (max 2000 mg/dose) + Metronidazole 10 mg/kg/dose IV q8h (max: 500 mg/dose)	Ciprofloxacin 10 mg/kg/dose IV q12h (max: 400 mg/dose) + Metronidazole 10 mg/kg/dose IV q8h (max: 500 mg/dose)	If adequate source control: 4-7 days  If source control not performed, consider ID consult	
Severe or complicated intra-abdominal Infection, or hospital-onset uncomplicated intra-abdominal infection	Enterobacterales, Bacteroides spp	Piperacillin-Tazobactam 100mg/kg/dose (piperacillin component) q8h Extended infusion OR Cefepime 50 mg/kg/dose IV q8h (max 2000 mg/dose) +	Ciprofloxacin 10 mg/kg/dose IV q12h (max: 400 mg/dose) + Metronidazole 10 mg/kg/dose IV q8h (max: 500 mg/dose)	Consult ID for duration	ID consult recommended  If history of ESBL Enterobacterales, consider meropenem If liver transplant recipient, consider enterococcus coverage (piperacillin-

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		Metronidazole 10 mg/kg/dose IV q8h (max: 500 mg/dose)			tazobactam provides enterococcus coverage). Empiric antifungal therapy indicated in critically ill patients with recent organ transplant or abdominal surgery
<b>Genitourinary Tract</b>					
Pelvic Inflammatory Disease (PID), inpatient	<i>Neisseria gonorrhoeae</i> , <i>Chlamydia trachomatis</i> , enteric Gram-negative bacilli, anaerobes, often polymicrobial	Ceftriaxone 50 mg/kg IV/IM q24h (max: 1000 mg/dose) + Doxycycline 2.2 mg/kg PO q12h (max: 100 mg/dose) + Metronidazole 10 mg/kg/dose IV/PO q 12h (max: 500 mg/dose)	Clindamycin 10 mg/kg/dose IV/PO q8h (max IV: 900 mg/dose; max PO: 1800 mg PER DAY, consider dividing doses over 450 mg/dose) + Gentamicin 2mg/kg/dose IV x1 dose followed by 1.5mg/kg/dose IV q8h	14 days	If using alternative regimen: 24 hours after clinical improvement: Stop Clindamycin and Gentamicin and start: Doxycycline PO + Metronidazole PO to complete 14-day total course
Urinary Tract Infections	Enteric Gram-negative bacilli <i>Enterococcus</i> spp.	Refer to Pediatric Urinary tract infection ValU/firstline Pediatric Care Pathway			
<b>Orthopedic</b>					
Musculoskeletal infections	<i>Staphylococcus aureus</i> (MSSA or MRSA), <i>Streptococcus pyogenes</i> , Group B Strep, <i>E. Coli</i> , <i>Serratia</i> , CoNS	Refer to Pediatric Musculoskeletal infection ValU/Firstline Pathway			Recommend ID Consult
<b>Respiratory Tract</b>					
Aspiration pneumonia	Oral flora, including oral anaerobes	Ampicillin-sulbactam 50 mg/kg/dose ampicillin component IV q6h (max: 2000 mg/dose) OR Amoxicillin-clavulanate 45 mg/kg/dose amoxicillin component PO q12h OR Ceftriaxone 50 mg/kg/dose IV q24h (max: 2000mg/dose)**	Clindamycin 10 mg/kg/dose IV/PO q8h (max IV: 900 mg/dose; max PO: 1800 mg PER DAY, consider dividing doses over 450 mg/dose)	5 days	**Ceftriaxone can be used as alternate monotherapy to ampicillin-sulbactam as it will provide adequate anaerobic coverage for most commonly occurring pathogens
Community Acquired Pneumonia (CAP)	<i>Streptococcus pneumoniae</i> , <i>Mycoplasma pneumoniae</i> , <i>Streptococcus pyogenes</i> ,	Refer to Pediatric Community Acquired			

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	<i>Haemophilus influenzae</i> , <i>Moraxella catarrhalis</i>  Also consider: <i>Bordetella pertussis</i> <i>Chlamydia pneumoniae</i>	Pneumonia ValU/Firstline Pathway			
Tracheitis (intubated/tracheostomy)	Gram-negative organisms <i>Staphylococcus aureus</i>	Cefepime 50 mg/kg/dose IV q8h (max: 2000mg/dose) + May consider vancomycin if critically ill (obtain MRSA nares)	Ciprofloxacin 10mg/kg/dose PO q12h (max: 500mg/dose) + May consider vancomycin per pharmacy if critically ill (obtain MRSA nares)	5 days	
Hospital/Ventilator associated pneumonia (HAP/VAP)	<i>Pseudomonas aeruginosa</i> , other lactose negative gram-negative rods, <i>Staphylococcus aureus</i> (MRSA/MSSA), plus above	Vancomycin per pharmacy (obtain MRSA nares) + Cefepime 50 mg/kg/dose (max 2000 mg/dose) IV q8h	Vancomycin per pharmacy (obtain MRSA nares) + Levofloxacin <u>6 mo-4 years:</u> 10 mg/kg/dose IV/PO q12h (max: 750 mg daily) <u>≥ 5 years:</u> 10 mg/kg/dose IV/PO q24h (max: 750 mg/dose)	7 days	
Lung Abscess	Oral anaerobes, staphylococci, streptococci	Ceftriaxone 100mg/kg/day IV divided daily or BID (max dose 2g/day) + Clindamycin 13 mg/kg/dose IV/PO q8h (max:600 mg/dose)  <u>If severe disease, ICU:</u> Vancomycin per pharmacy (obtain MRSA nares) + Ceftriaxone 100mg/kg/day IV divided daily or BID (max dose 2g/day) + Metronidazole 7.5 mg/kg/dose IV q6h (max: 500 mg/dose)	Levofloxacin: <5 yrs: 10mg/kg/dose IV Q12h >5 yrs: 10mg/kg/dose IV q24h + Metronidazole 7.5 mg/kg/dose IV q6h (max: 500 mg/dose)  If severe disease consider vancomycin per pharmacy (obtain MRSA nares)	Per ID recommendations	ID consult recommended
Skin and Soft Tissue					

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Cellulitis, mild to moderate without abscess	<i>Streptococcus pyogenes</i> >> MSSA, MRSA	Cefazolin 25 mg/kg/dose IV q8h (max: 2 gm/dose) OR Cephalexin 25 mg/kg/dose PO q8h (max: 500 mg/dose)	Trimethoprim-sulfamethoxazole 6 mg/kg/dose PO q12h (max: 160 mg TMP/dose)	5 days	
Purulent cellulitis/abscess	<i>Streptococcus pyogenes</i> , MSSA, MRSA	Trimethoprim-sulfamethoxazole 6 mg/kg/dose PO q12h (max: 160 mg TMP/dose)		5-7 days (may not need additional antibiotics if drained abscess <2 cm and no cellulitis)	
Cellulitis, severe or toxic appearing (includes necrotizing infection)	<i>Streptococcus pyogenes</i> , MSSA, MRSA	Vancomycin per pharmacy + Ceftriaxone 50mg/kg/day q24h (max: 2000mg/dose) + Clindamycin 10 mg/kg/dose IV/PO q8h (max IV: 900 mg/dose; max PO: 1800 mg PER DAY, consider dividing doses over 450 mg/dose)	Vancomycin per pharmacy + Meropenem 20mg/kg/dose q8h (max: 1000mg/dose) + Clindamycin 10 mg/kg/dose IV/PO q8h (max IV: 900 mg/dose; max PO: 1800 mg PER DAY, consider dividing doses over 450 mg/dose)	Per ID recommendations	ID consult recommended
Lymphadenitis, suppurative	MSSA or MRSA, Group A <i>Streptococcus</i>	Ampicillin-sulbactam 50 mg/kg/dose ampicillin component IV q6h (max: 2000 mg/dose) OR Cefazolin 25 mg/kg/dose IV q8h (max: 2 gm/dose)  If concern for MRSA consider trimethoprim-sulfamethoxazole or vancomycin	Trimethoprim-sulfamethoxazole 6 mg/kg/dose PO q12h (max: 160 mg TMP/dose)	Depending on clinical course	Consider ID consult
<b>Fever or Sepsis</b>					
Fever and Central line	MSSA or MRSA Coagulase-negative Staphylococcus (CoNS) Enteric Gram-negative bacilli	Refer to Fever and Central Line ValU/firstline Pediatric Care Pathway			
Pediatric sepsis	<i>Streptococcus agalactiae</i> (GBS), <i>Escherichia coli</i> , <i>Listeria monocytogenes</i>	Refer to Pediatric Sepsis ValU/firstline Pediatric Care Pathway			