Children's Mercy Kansas City

Outpatient Antibiotic Handbook

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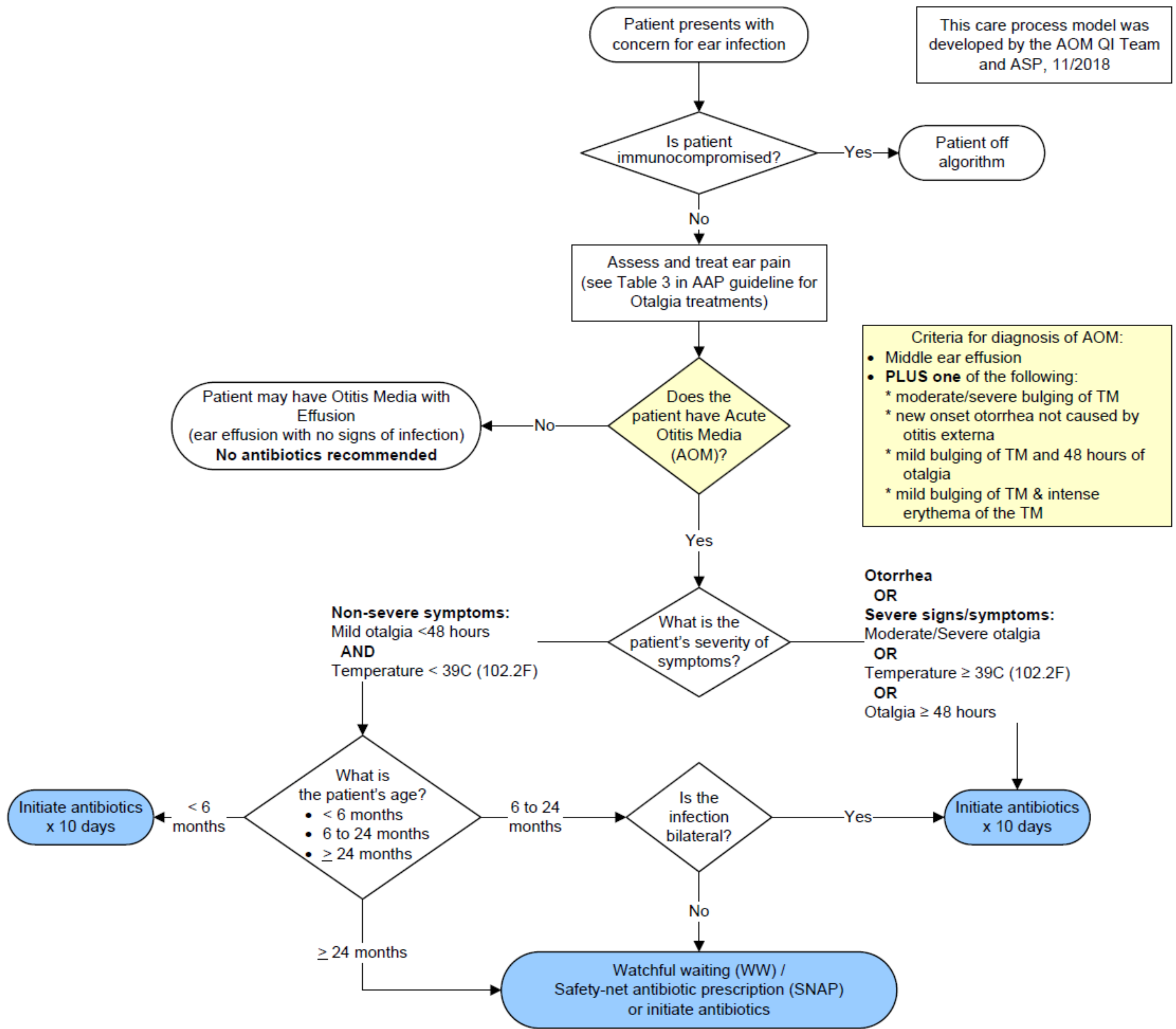
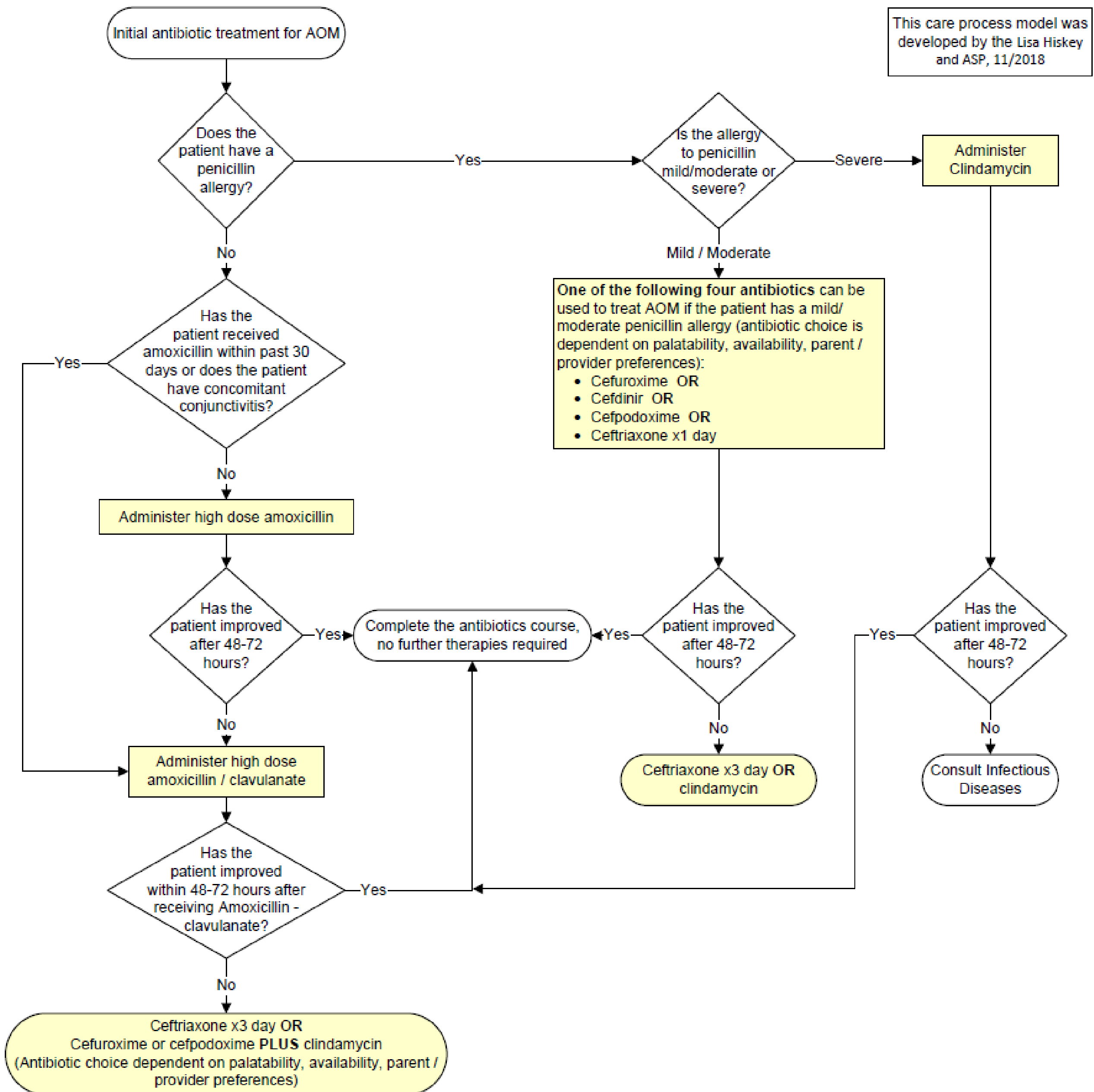
Acute Otitis Media (AAP guidelines 2013)



Antibiotic duration for amoxicillin, amoxicillin/clavulanate, cefuroxime, cefdinir, cefpodoxime, and clindamycin:
<2 years of age **OR** severe AOM **OR** chronic AOM **OR** recurrent AOM **OR** TM perforation = **10 days**
2-5 years of age with non-severe symptoms = **7 days**
≥6 years of age with non- severe symptoms =**5-7 day**



Dosing of antibiotics found in algorithm:

- Amoxicillin 40-50 mg/kg/dose PO BID (max 2000 mg/dose)
- Amoxicillin/clavulanate 40-50 mg/kg/dose (amoxicillin component) PO BID (max 2000 mg amoxicillin component /dose)
- Cefuroxime 15 mg/kg/dose PO BID (max 500 mg/dose) (only available in tablet form)
- Cefdinir 7 mg/kg/dose PO BID (max 300 mg/dose)
- Cefpodoxime 5 mg/kg/dose PO BID (max 200 mg/dose)
- Ceftriaxone 50 mg/kg/dose IM/IV qDay x 1-3 days* (daily max 1 gram/dose)
  *Administer Ceftriaxone for 1 day when used as a first line for patients with penicillin allergy, and 3 days if the patient has failed other antibiotics
- Clindamycin 10 mg/kg/dose PO TID (max 600 mg/dose)

Antibiotic duration for amoxicillin, amoxicillin/clavulanate, cefuroxime, cefdinir, cefpodoxime, and clindamycin:

<2 years of age **OR** severe AOM **OR** chronic AOM **OR** recurrent AOM **OR** TM perforation = **10 days**
2-5 years of age with non-severe symptoms = **7 days**
≥6 years of age with non- severe symptoms =**5-7 day**

The above algorithm is for a previously healthy child with **no conditions that may alter the natural course of AOM** (i.e. tympanostomy tubes, anatomic abnormalities (i.e. cleft palate), genetic conditions with craniofacial abnormalities, immunodeficiencies or cochlear implants).

Watchful waiting (WW)/ Safety-Net Antibiotic Prescription (SNAP):
- Joint decision between provider and caregiver
- Must have close follow-up (within 48-72 hours) if SNAP not given
- Must be able to fill antibiotic prescription if signs/symptoms worsen or fail to improve in 48-72 hours from onset of symptoms

*** If using SNAP, please place a comment in prescription instructions (fill upon patient request)***

Antibiotic Recommendations

- First line:
  - Amoxicillin 40-50 mg/kg/dose PO BID (max 2000 mg/dose)
- Alternative therapies:
  - If received amoxicillin within the past 30 days **OR** concomitant conjunctivitis:
    - Amoxicillin/clavulanate 40-50 mg/kg/dose (amoxicillin component) PO BID (max 2000 mg amoxicillin component/dose) (use Augmentin ES-600™ 600mg/42.9mg/5mL for liquid. For pills, use 875 mg or 1000 mg XR tablets)
  - Mild/moderate penicillin allergy (e.g. rashes including hives):
    - Cefuroxime 15 mg/kg/dose PO BID (max 500 mg/dose) (only available in tablet form)
    - Cefdinir 7 mg/kg/dose PO BID (max 300 mg/dose)
    - Cefpodoxime 5 mg/kg/dose PO BID (max 200 mg/dose)
    - Ceftriaxone 50 mg/kg/dose IM/IV qDay x 1-3 days (max 1000 mg/dose)

    *** Risk of penicillin/cephalosporin cross-reactivity extremely low***
  - Severe penicillin allergy (e.g. anaphylaxis):
    - Clindamycin 10 mg/kg/dose PO TID (max 600 mg/dose)
  - Failure to improve after 48-72 hours of initial antibiotic:
    - Treatment failure with amoxicillin
      - Amoxicillin/clavulanate 40-50 mg/kg/dose (amoxicillin component) PO BID (max 2000mg amoxicillin component/dose) (use 600 mg ES form for liquid. For pills, can use 875mg tablet OR XR 1000 mg tablets)
    - Treatment failure with amoxicillin/clavulanate:
      - Ceftriaxone 50 mg/kg/dose (max 1000 mg/dose) IM or IV daily x 3 days OR
      - Cefuroxime or cefpodoxime PLUS clindamycin
- Otorrhea (in the setting of an AOM with a perforated tympanic membrane)

  The following could be considered **IN ADDITION TO SYSTEMIC ANTIBIOTICS**
  - Ciprodex® (Ciprofloxacin 0.3% - Dexamethasone 0.1%) otic suspension (4 drops instilled into affected ear twice daily for 7 days for patients older than 6 months)
  - Ofloxacin otic solution (Instill 5 drops into affected ear twice daily for 10 days for children older than 6 months)

    **** The above otic drops may be used alone for otorrhea for **otitis externa** or ear tubes*

    ****If otic drops on shortage, can use ophthalmic drops*

<u>Group A Streptococcal pharyngitis</u> (IDSA guidelines 2012)

Please refer to CPG for testing algorithm:
https://www.childrensmercy.org/Health_Care_Professionals/Medical_Resources/Evidence_Based_Practice/Pharyngitis/Algorithm/

Uncommon in children <3 years of age and children of any age with viral symptoms

- First Line:
    - Amoxicillin 50 mg/kg/dose PO qDay (daily max 1000 mg/day) x 10 days
    - Penicillin G benzathine IM once
        - ≤27 kg: 600,000 U
        - >27 kg: 1.2 million U
    - Penicillin VK
        - ≤ 27kg: 250 mg PO BID – TID x 10 days
        - > 27 kg: 500 mg PO BID – TID x 10 days
- Alternative therapies:
    - Mild penicillin allergy (e.g. rashes including hives):
        - Cephalexin 25 mg/kg/dose PO BID (max 500 mg/dose) x 10 days
        - Note: 2nd and 3rd generation cephalosporins are not recommended due to unnecessarily broad spectrum
    - Severe penicillin allergy (e.g., anaphylaxis):
        - Clindamycin 10 mg/kg/dose PO TID (max 300 mg/dose) x 10 days
        - Azithromycin 12 mg/kg/dose PO qDay (max 500 mg/dose) x 5 days

    ****Note: Azithromycin is <u>not recommended</u> unless patient has severe allergy to penicillin and cephalosporins. Resistance is well known and treatment failure may occur****

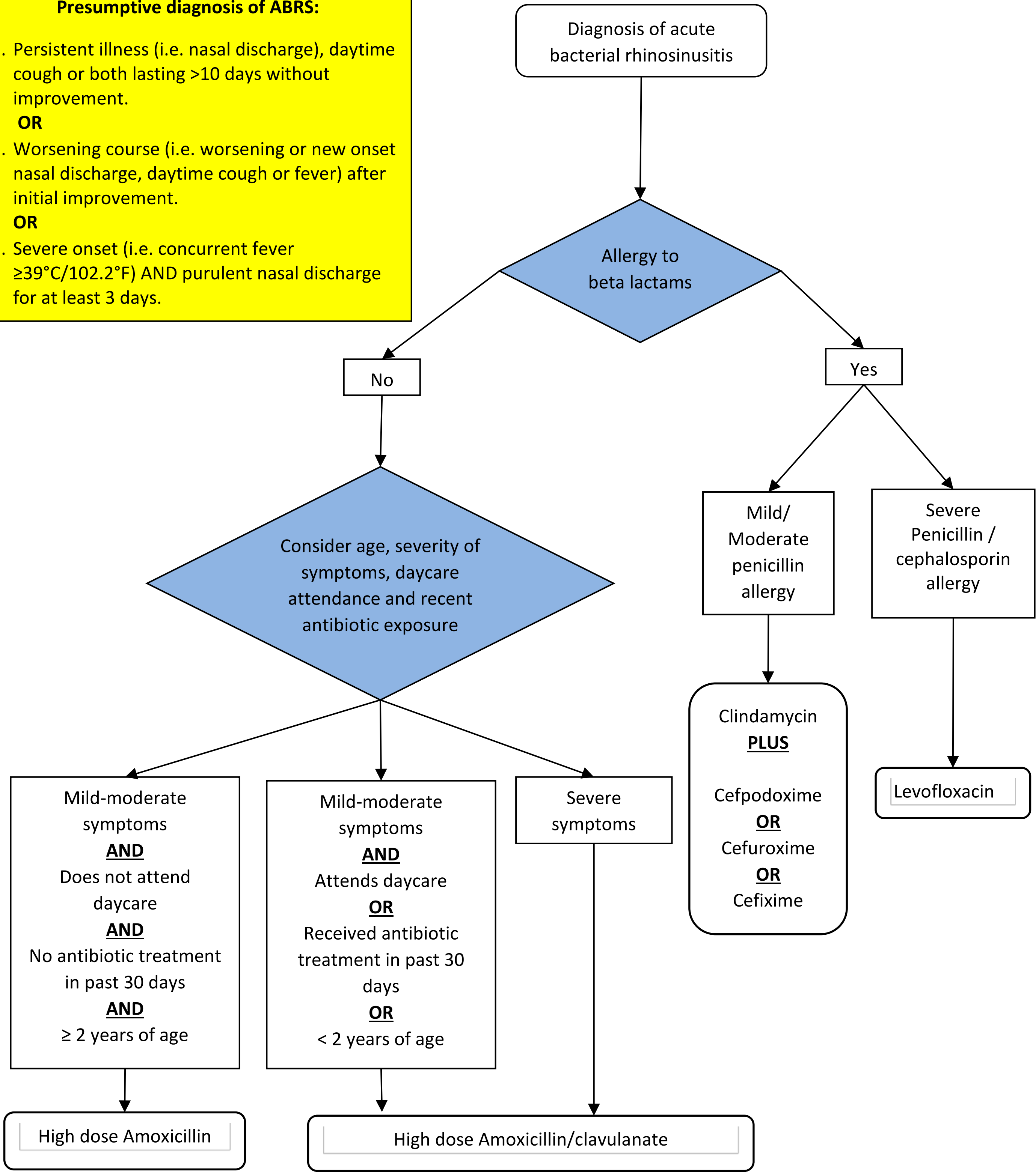
Uncomplicated community-acquired pneumonia (IDSA guidelines 2011)

Please refer to CPG: https://www.childrensmercy.org/Health_Care_Professionals/Medical_Resources/Evidence_Based_Practice/Community_Acquired_Pneumonia/Community_Acquired_Pneumonia/

- Duration: 5-7 days
- First line:
  - Amoxicillin 40-50 mg/kg/dose PO BID (max 2000 mg/dose)
- Alternative therapies:
  - Mild/moderate penicillin allergy (e.g. rashes including hives):
    - Cefuroxime 15 mg/kg/dose PO BID (max 500 mg/dose) (only available in tablets)
    - Cefpodoxime 5 mg/kg/dose PO BID (max 200 mg/dose)
    - Cefprozil 7.5-15 mg/kg/dose PO BID (max 500 mg/dose)
      Note: Cefdinir is NOT recommended for empiric treatment of CAP as it is less effective against Pneumococcus
    - Clindamycin 10 mg/kg/dose PO TID (max 600 mg/dose)
  - Severe penicillin allergy (e.g anaphylaxis)/ cephalosporin allergy:
    - Clindamycin 10 mg/kg/dose PO TID (max 600 mg/dose)
  - Severe penicillin allergy / cephalosporin allergy AND intolerance of clindamycin:
    - Levofloxacin 8-10mg/kg/dose PO BID (6 months – 5 years), once daily (≥ 5 years) (max 750mg/**day**)

- Atypical pneumonia (consider in adolescents with bilateral disease):
  - Azithromycin 10 mg/kg/dose PO qDay on day #1 (max 500 mg/dose), then 5 mg/kg/dose PO qDay on days 2-5 (max 250 mg/dose)
    resistance to azithromycin is significant among typical bacterial pathogens, especially *Streptococcus pneumoniae*

Acute bacterial rhinosinusitis (ABRS) (AAP guidelines 2013)



Acute bacterial rhinosinusitis (ABRS)

- Diagnosis
    - Presumptive diagnosis of ABRS can be made if patient with acute URI presents with:
        - Persistent illness (i.e. nasal discharge), daytime cough, or both lasting >10 days without improvement
          OR
        - Worsening course after initial improvement (i.e. worsening or new onset nasal discharge, daytime cough or fever)
          OR
        - Severe onset (i.e. concurrent fever ≥39°C/102.2°F) AND purulent nasal discharge for at least 3 consecutive days
- Treatment
    - Duration: 10 days
        - Treatment should continue for at least 7 days after resolution of symptoms
    - First line:
        - Mild-moderate disease, does not attend daycare, has not received antibiotics within past 30 days, and ≥ 2 years of age (*Note: ABRS is uncommon in children < 2 years*)
            - Amoxicillin 40-50 mg/kg/dose PO BID (max 2000 mg/dose)
        - Severe disease OR mild-moderate disease AND any of the following: attends daycare, has received antibiotics within past 30 days, < 2 years of age:
            - Amoxicillin/clavulanate 40-50 mg/kg/dose (amoxicillin component) PO BID (max 2000 mg amoxicillin/dose) (use Augmentin ES-600™ 600mg/42.9mg/5mL for liquid. For pills, use 875 mg or 1000 mg XR tablets)
    - Alternative therapies:
        - Mild/moderate penicillin allergy (e.g. rashes including hives):
            - Clindamycin 10 mg/kg/dose PO TID (max 600 mg/dose)
              PLUS one of the following cephalosporins:
                - Cefpodoxime 5 mg/kg/dose PO BID (max 200 mg/dose)
                - Cefuroxime 250 mg PO BID for children able to swallow pills (only available in tablets)
                - Cefixime 4 mg/kg/dose PO BID OR 8 mg/kg/dose PO qDay (max 400 mg/**day**)
        - Severe penicillin allergy (e.g anaphylaxis)/ cephalosporin allergy:
            - Levofloxacin 10-20 mg/kg/dose PO qDay (for patients ≥ 5 years) OR 5-10 mg/kg/dose PO BID (for patients 6 months- 5 years) (daily max 500 mg/**day**)

**** per AAP guidelines, even patients with a history of serious type 1 immediate reaction to penicillin may be safely treated with cefuroxime and cefpodoxime given low risk of cross-reactivity****

****consider calling on-call infectious disease physician****

<u>Uncomplicated Urinary Tract Infection in children >2 years</u> (no fever, vomiting or flank pain. Well appearing. No concern for possible pyelonephritis)

- If history of UTIs, empiric therapy should be based on previous microbiology if available
- Duration:
  - Adolescents: 3 days
  - Younger children: 5-7 days
- First line:
  - Cephalexin 17-25 mg/kg/dose PO TID (max 1500 mg/**day**)
- Alternative therapies:
  - Cefixime 8 mg/kg/dose PO qDay (max 400 mg/**day**)
  - Amoxicillin/clavulanate 13.3 mg/kg/dose PO <u>TID</u> (max 500 mg amoxicillin component/dose)
- Severe penicillin allergy (e.g. anaphylaxis) / cephalosporin allergy:
  - TMP/SMX 3-6 mg/kg/dose (trimethoprim component) PO BID (max 160 mg TMP/dose)

    ****Note: At CMH, there is increasing rates of E coli resistance to TMP/SMX****
  - Nitrofurantoin
    - Macrocrystal (Macrodantin® or Furadantin®) 1.25-1.75 mg/kg/dose PO q 6h (max 100 mg/dose)
    - Macrocrystal/monohydrate (Macrobid®) 100 mg PO BID **FOR ADOLESCENTS ONLY**

<u>Note: Cefdinir should not be used for UTI due to poor urine concentration</u>

<u>Pyelonephritis, febrile Urinary Tract Infection, and children 2-24 months of age</u> (AAP guidelines 2011)

If history of UTIs, empiric therapy should be based on previous microbiology if available

Evaluate need for admission

- Duration: 10-14 days
- First line:
  - Cephalexin 25-33 mg/kg/dose PO TID (max 1500 mg/**day**)
- Alternative therapies:
  - Cefixime 8 mg/kg/dose PO qDay (max 400 mg/**day**)
  - Amoxicillin/clavulanate 13.3 mg/kg/dose (amoxicillin component) PO <u>TID</u> (max 500 mg amoxicillin component/dose)
- Severe penicillin allergy (e.g. anaphylaxis) /cephalosporin allergy:

  TMP/SMX 3-6 mg TMP/kg/dose (trimethoprim component) PO BID (max 160 mg TMP/dose)

  ****Note: At CMH, there is increasing rates of E coli resistance to TMP/SMX****
  - Ciprofloxacin 5-10 mg/kg/dose PO BID (max 500 mg/dose)

<u>Note: Cefdinir should not be used for UTI due to poor urine concentration</u>

<u>Skin and soft tissue infections</u> (IDSA guidelines 2014)

- <u>Impetigo</u>
    - Mild cases with few lesions
        - Topical mupirocin TID x 5 days
        - Topical retapamulin BID x 5 days
    - Numerous lesions or outbreaks involving several patients
        - Duration: 5-7 days
        - First line treatment:
            - Cephalexin 9-17 mg/kg/dose PO TID (max 250 mg/dose) x 5-7 days
        - Alternative therapies:
            - Amoxicillin/clavulanate 15 mg/kg/dose (amoxicillin component) PO **TID** (max 875 mg/dose) x 5-7 days
            - If MRSA suspected or confirmed (i.e. personal or family history of MRSA) AND/OR severe penicillin allergy/ cephalosporin allergy:
                - Clindamycin 10 mg/kg/dose PO TID (max 600 mg/dose) x 5-7 days
                - TMP-SMX 4-6 mg/kg/dose (trimethoprim component) PO BID (max 160 mg TMP/dose) x 5-7 days

                ****Note: TMP-SMX may not cover GAS****

- <u>Cellulitis</u>
    - Duration: 5-7 days
    - First line:
        - Cephalexin 17 mg/kg/dose PO TID (max 500 mg/dose)
    - If cephalosporin allergy OR MRSA suspected (i.e. personal or family history of MRSA):
        - Clindamycin 10 mg/kg/dose PO TID (max 600 mg/dose)

- <u>Abscess :</u> Drainage with cultures AND
    - Duration: 5-7 days
    - Clindamycin 10 mg/kg/dose PO TID (max 600 mg/dose)
    - **OR** TMP-SMX 4-6 mg/kg/dose (trimethoprim component) PO BID (max 160 mg TMP/dose)

<u>Animal/Human bite</u>

- Duration:
    - Prophylaxis (for moderate to severe wounds with edema or crush injury, puncture wounds, facial bite wounds): 3 days
    - Treatment: 5-10 days
- First line:
    - Amoxicillin/clavulanate 22.5 mg/kg/dose (amoxicillin component) PO BID (max 875 mg/dose)
- Penicillin allergy:
    - Clindamycin 10 mg/kg/dose PO TID (max 600 mg/dose) **PLUS** TMP-SMX 5 mg/kg (trimethoprim component) PO BID (max 160 mg TMP/dose)

Dental abscess

Assess for complicated infection (ill-appearing, signs of deep neck space infection, osteomyelitis of the mandible)

- Duration: 10 days
- First line:
    - Amoxicillin 17 mg/kg/dose PO **TID** (max 500 mg/dose)
- Alternative for complicated infections or amoxicillin failure
    - Amoxicillin/clavulanate 17 mg/kg/dose (amoxicillin component) PO **TID** (max 600 mg/dose)
- If buccal involvement AND/OR penicillin allergy:
    - Clindamycin 10 mg/kg/dose PO TID (max 600 mg/dose)

Refer to dentist for F/U within 7 days. May contact Children's Mercy Dental Clinic for "emergency" appointment if unable to see dentist within 7 days.

Acute lymphadenitis

- First line:
    - Cephalexin 17-25 mg/kg/dose PO TID (max 4 gram/**day**) x 7-10 days
- Alternative therapies:
    - Amoxicillin/clavulanate 22.5 mg/kg/dose (amoxicillin component) PO BID x 7-10 days (max 875 mg/dose)
- If concern for MRSA (i.e. personal or family history of MRSA) AND/OR severe penicillin allergy/ cephalosporin allergy:
    - Clindamycin 10 mg/kg/dose PO TID (max 600 mg/dose) x 7-10 days
- If concern for *Bartonella henselae* (treatment may shorten duration of adenopathy):
    - Azithromycin 12 mg/kg PO qDay (max 500 mg/dose) x 5 days

Notes: