Antibiotic Stewardship Webinar Series: Why It's Important for Your Practice and Patients

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Antibiotic Stewardship Webinar Series:

#2: Prescribing Guideline

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GEORGIA PEDIATRIC ANTIBIOTIC STEWARDSHIP

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Disclaimer

This presentation is for informational and educational purposes only. It is not to be considered medical advice for any particular patient. Clinicians must rely on their own informed clinical judgments when making recommendations for their patients. Patients in need of medical advice should consult their personal healthcare provider.

Antibiotic Prescribing Guidelines for Outpatient Management in Otherwise Healthy Children

- Antibiotics are the most common medication class prescribed in children

- Approximately 20% of pediatric outpatient visits result in an antibiotic prescription

- Almost half of these antibiotic prescriptions may be inappropriate (unnecessary, overly broad or incorrectly prescribed)[1]

- Even when prescribed appropriately, antibiotics can result in adverse events or the development of antibiotic resistance

- The goal of this guideline is to help clinicians choose the most narrowly focused antibiotics based on the most likely bacterial pathogens and treat for the shortest effective duration.

Antibiotic Prescribing Guidelines for Outpatient Management in Otherwise Healthy Children

- These recommendations are generally meant to apply to children who are:
  - Previously healthy
  - Appropriately vaccinated based on their age
  - Well enough to be treated in an outpatient setting

- Clinicians may need to consider alternative treatment regimens based on epidemiologic and clinical history, physical exam and illness severity
- This is not a comprehensive guideline for overall management

Antibiotic Prescribing Guidelines for Outpatient Management in Otherwise Healthy Children

- Group A streptococcal pharyngitis
- Acute otitis media
- Acute bacterial rhinosinusitis
- Dental abscesses
- Community-acquired pneumonia
- Acute bacterial lymphadenitis
- Cellulitis
- Purulent cellulitis/abscesses
- Cellulitis or abscess associated with domestic animal or human bites
- Urinary tract infections

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Group A Streptococcal Pharyngitis

Group A Streptococcal (GAS) Pharyngitis

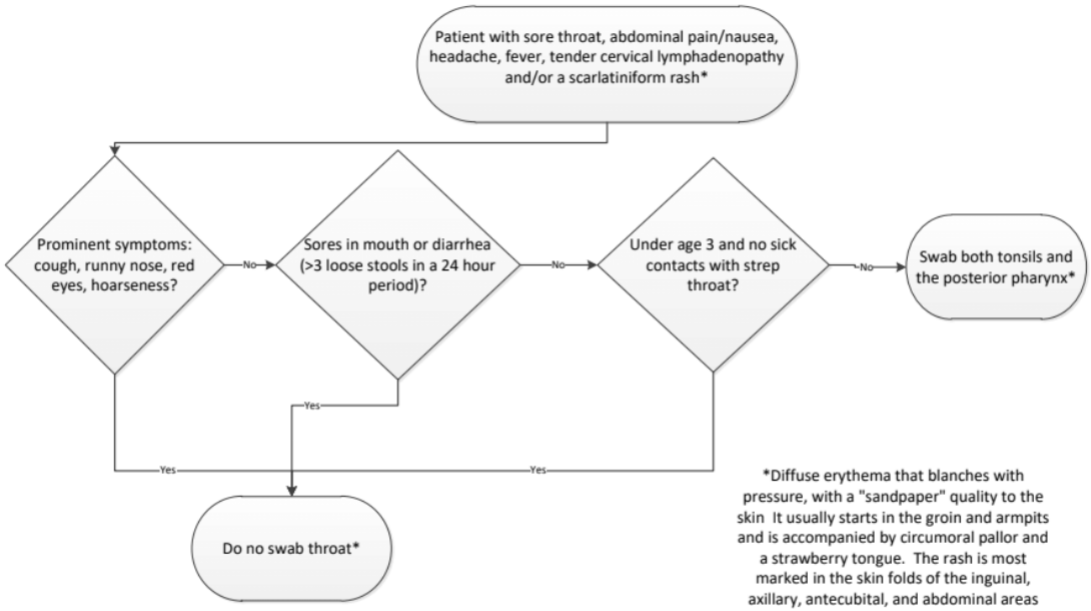
- Characterized by fever, pharyngitis, exudative tonsillitis and cervical lymphadenitis
- Diagnostic stewardship is important as children may be colonized with GAS in their posterior pharynx
- Avoid testing for GAS if the child also has symptoms of a viral upper respiratory tract infection (congestion, rhinorrhea, mouth sores, hoarseness and/or cough)

GAS Treatment Options	
Penicillin VK	<27 kg: 250 mg/dose orally twice daily for 10 days ≥27 kg: 500 mg/dose orally twice daily for 10 days
Amoxicillin	50 mg/kg/dose orally once daily for 10 days (max 1200 mg/dose)
Penicillin Allergic (nonanaphylactic)	
Cephalexin	20 mg/kg/dose orally twice daily for 10 days (max 500 mg/dose)
Penicillin Allergic (anaphylactic)	
Clindamycin	7 mg/kg/dose orally three times a day for 10 days (max 300 mg/dose)
Azithromycin	12 mg/kg/dose orally on day 1 (max 500 mg/dose), followed by 6 mg/kg/dose orally on days 2-5 (max 250 mg/dose)

Target pathogen: Group A streptococcus (GAS)

- 15-20% of children may be carriers for *S. pyogenes*
- Do not treat for strep throat without a positive test
- Do not test for strep throat if the patient likely has a viral illness

Licensed Professional Initiated Protocol: Obtaining Throat Swab for Group A Streptococcal Pharyngitis



*Diffuse erythema that blanches with pressure, with a "sandpaper" quality to the skin It usually starts in the groin and armpits and is accompanied by circumoral pallor and a strawberry tongue. The rash is most marked in the skin folds of the inguinal, axillary, antecubital, and abdominal areas and about pressure points.

References

Shulman ST, Bisno AL, Clegg HW, et al. Clinical practice guidelines for the diagnosis and management of group A streptococcal pharyngitis: 2012 update by the Infectious Diseases Society of America. *Clin Infect Dis*. 2012;55(10):e86-e102. doi:10.1093/cid/cis629.

Hersh AL, Jackson MA, Hicks LA & Committee on Infectious Diseases. Principles of judicious antibiotic prescribing for upper respiratory tract infections in pediatrics. *J Pediatr*. 2013;132(6): 1146-1154. doi: 10.1542/peds.2013-3260.

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Acute Otitis Media

Acute Otitis Media (AOM)

- Inflammation of the middle ear with fluid in the middle ear accompanied by ear pain, a perforated eardrum and drainage
- A diagnosis of AOM is appropriate in children who present with at least one of the following:
  - Moderate to severe bulging of the tympanic membrane
  - New onset of otorrhea not due to acute otitis externa

AOM Treatment Options	
Amoxicillin	40-45 mg/kg/dose orally twice daily (max 2000 mg/dose)
Amoxicillin/clavulanate ES (Augmentin™ ES)	40-45 mg/kg/dose orally twice daily (max 2000 mg/dose)
Amoxicillin/clavulanate ER (Augmentin™ ER)	> 40 kg: 2000 mg amoxicillin orally twice daily (max 2000 mg/dose) for children and adolescents who prefer tablets over a suspension
Penicillin Allergic	
Cefdinir	14 mg/kg/dose (max 600mg/dose) orally, once a day (approved for use from 6 months of age)
Ceftriaxone	50 mg/kg (max 1 g/dose) intramuscular injection per day for 1 to 3 days

Acute Otitis Media (AOM)

Target pathogens: Streptococcus pneumoniae, non-typeable *Haemophilis influenzae* and *Moraxella catarrhalis*

- ** Consider "watching and waiting" for appropriate patients*
- Amoxicillin/clavulanate preferred for patients who have received antibiotics within the preceding 30 days, have a history of otitis media unresponsive to amoxicillin or have associated conjunctivitis (*H. influenzae*)
- *Duration:*

- < 2 years or severe symptoms: 10 days[2]
- 2-5 years with mild to moderate symptoms: 7 days
- > 5 years with mild to moderate symptoms: 5 days

Delayed Antibiotic Prescriptions

What Is Delayed Prescribing?

BE ANTIBIOTICS AWARE
SMART USE, BEST CARE

WAIT. DO NOT FILL YOUR PRESCRIPTION JUST YET.

Your healthcare professional believes your illness may resolve on its own.

First, follow your healthcare professional's recommendations to help you feel better without antibiotics. Continue to monitor your own symptoms over the next few days.

- ◯ Rest.
- ◯ Drink extra water and fluids.
- ◯ Use a cool mist vaporizer or saline nasal spray to relieve congestion.
- ◯ For sore throats in adults and older children, try ice chips, sore throat spray, or lozenges.
- ◯ Use honey to relieve cough. Do not give honey to an infant younger than 1.

If you **do not feel better in ____ days/hours or feel worse,** go ahead and fill your prescription.

If you **feel better, you do not need the antibiotic,** and do not have to risk the side effects.

Waiting to see if you really need an antibiotic can help you take antibiotics only when needed. When antibiotics aren't needed, they won't help you, and the side effects could still hurt you. Common side effects of antibiotics can include rash, dizziness, nausea, diarrhea, and yeast infections.

Antibiotics save lives, and when a patient needs antibiotics, the benefits outweigh the risks of side effects. You can protect yourself and others by learning when antibiotics are and are not needed.

To learn more about antibiotic prescribing and use, visit **www.cdc.gov/antibiotic-use.**

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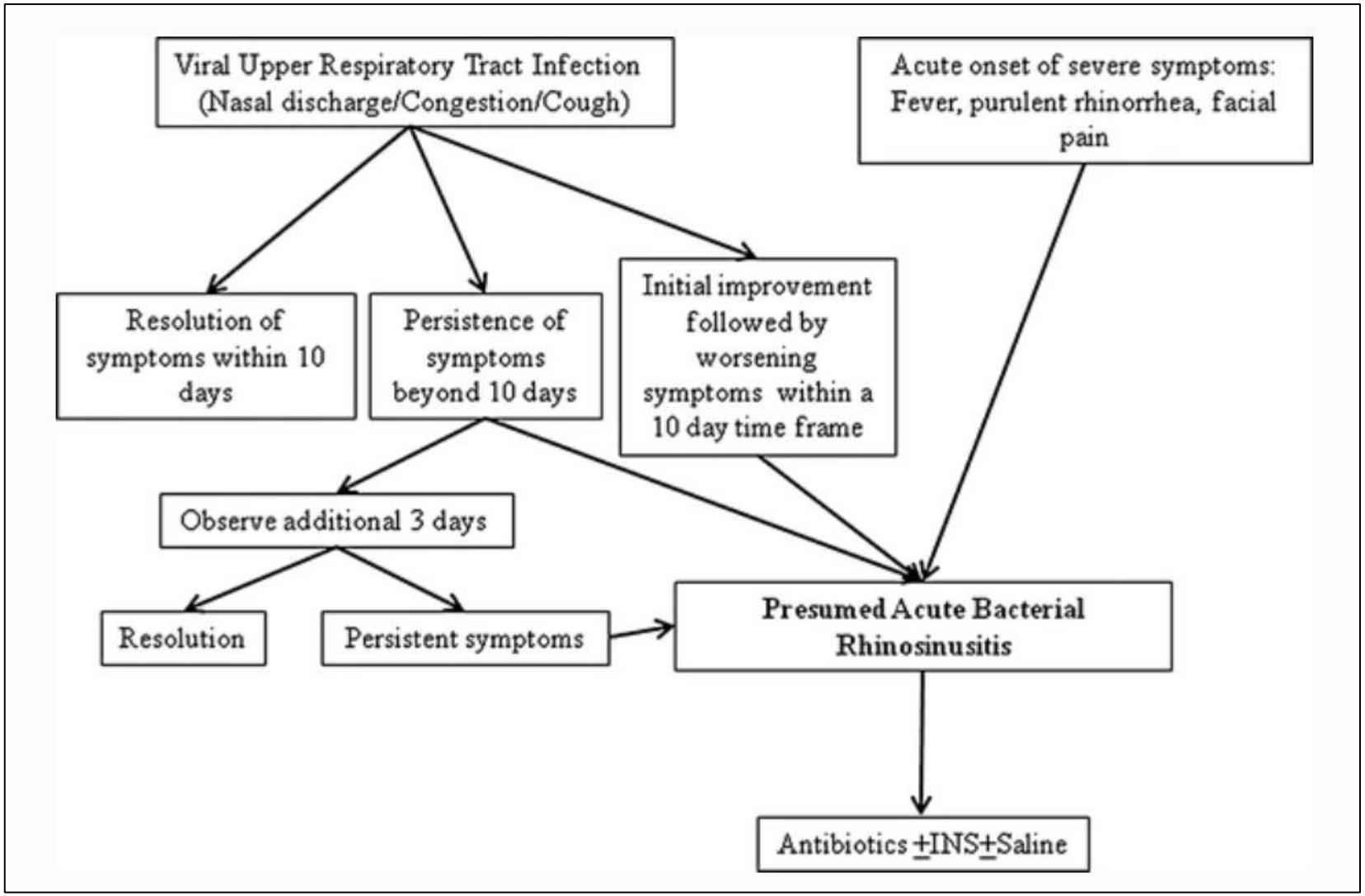
Acute Bacterial Rhinosinusitis

Acute Bacterial Rhinosinusitis

- The diagnosis of sinusitis should be based on one of three clinical scenarios:
  - Persistent illness with any nasal drainage or daytime cough for greater than 10 days without improvement
  - Worsening or new onset nasal drainage, daytime cough or fever after initial improvement (“double sickening”)
  - Severe onset with ≥102 °F temperature and purulent nasal discharge for at least three consecutive days



Nocon, C.C., Baroody, F.M. *Curr Allergy Asthma Rep* **14**, 443 (2014).

Acute Bacterial Rhinosinusitis

Sinusitis Treatment Options	
Amoxicillin	45 mg/kg/dose orally twice daily for 10 days (max 2000 mg/dose)
Amoxicillin/clavulanate ES (Augmentin™ ES)	45 mg/kg/dose orally twice daily for 10 days (max 2000 mg/dose)
Amoxicillin/clavulanate ER (Augmentin™ ER)	> 40 kg: 2000 mg amoxicillin orally twice daily (max 2000 mg/dose) for children and adolescents who prefer tablets over a suspension
Penicillin Allergic	
Clindamycin + cefdinir	10 mg/kg/dose orally three times a day for 10 days (max 600 mg/dose) + 14 mg/kg/dose orally once a day for 10 days (max 600 mg/day)
Levofloxacin	<5 years: 8-10 mg/kg/dose orally twice daily for 10 days (max 500 mg/day) ≥5 years: 8-10 mg/kg/dose orally once daily for 10 days (max 500 mg/day)

- *Target pathogens:* Nontypeable *H. influenzae*, *S. pneumoniae* and *M. catarrhalis*
- ** For penicillin allergic patients, please clarify the penicillin allergy to verify it's a true allergy*

JAMA. 2017 Dec 19;318(23):2325-2336. doi: 10.1001/jama.2017.18715.

Association of Broad- vs Narrow-Spectrum Antibiotics With Treatment Failure, Adverse Events, and Quality of Life in Children With Acute Respiratory Tract Infections

- Cohort study evaluation broad vs narrow spectrum antibiotics for treatment of acute respiratory tract infections
- Retrospective cohort: treatment failure
  - 30,159 children (19,179 with AOM; 6,746, GAS; and 4,234, acute sinusitis)
  - 4,307 (14%) prescribed broad-spectrum antibiotics: amoxicillin-clavulanate, cephalosporins, and macrolides
  - **Treatment failure: broad-spectrum 3.4% vs narrow-spectrum 3.1%**
- Prospective: quality of life, patient-centered outcomes, adverse events
  - 2,472 children (1,100 with AOM; 705, GAS; and 667, acute sinusitis)
  - 868 (35%) prescribed broad-spectrum antibiotics
  - **Quality of life: broad-spectrum 90.2 vs narrow-spectrum 91.5**
  - **Adverse events: broad-spectrum 3.7% vs narrow-spectrum 2.7%**

J Pediatric Infect Dis Soc. 2018 Dec 3;7(4):303-309. doi: 10.1093/jpids/pix073.

What Parents Think About the Risks and Benefits of Antibiotics for Their Child's Acute Respiratory Tract Infection

- Parental pressure is often cited as a reason overprescription of antibiotics for children with acute respiratory tract infection (ARTI).
- Semi structured interviews with 109 parents of children who presented with ARTI symptoms to pediatric primary care practices.
  - Parents did not plan to ask the pediatrician for antibiotics
  - Expected to gain reassurance and a plan to minimize symptoms
  - 3 perceptions about antibiotics were identified:
    - Have a sense of wariness when their child is prescribed antibiotics
    - Understand that antibiotic overuse is a problem but that it is driven by the demands of other parents
    - Preference for alternative treatment
  - The majority were not concerned about antibiotic resistance.
  - Adverse reactions to antibiotics were a concern

Szymczak JE, et al. JPIDS. 2018 Dec 3;7(4):303-309

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Community-Acquired Pneumonia

Community-acquired Pneumonia (CAP)

Target pathogens:

- CAP pneumonia may be caused by either bacterial or viral pathogens
- A viral etiology is much more common in children between 3 months and 5 years of age
- *S. pneumoniae* is the most common bacterial cause of CAP in children
- For school-aged children, if an atypical respiratory pathogen such as *Mycoplasma pneumoniae* is suspected, consider adding azithromycin to treatment with amoxicillin

Etiology of CAP in Children

- **Viruses**
  - All children: 14-35%[1]
  - Children 3mo- 5yrs: 50-60%[2]
- ***Streptococcus pneumoniae***
  - Most common bacterial cause[1]
- ***Mycoplasma pneumoniae* and *Chlamydophila pneumoniae***
  - More common in school-aged children and adolescents[3]

1. Shah S, Sharieff GQ. Emerg Med Clin North Am. 2007;25(4):961–979, vi
2. Virkki R, et al. Thorax. 2002;57(5):438–441
3. Nohynek H, Madhi S, Grijalva CG. Pediatr Infect Dis J. 2009;28(10 Suppl):S127–S132

Effects of a Clinical Practice Guideline for CAP on Actual Clinical Care

- Retrospective study
- Healthy children with uncomplicated CAP
- Key recommendations of the CPG
  - Inpatient: ampicillin 200-300 mg/kg/day
  - Outpatient: amoxicillin 80-100 mg/kg/day
  - Duration of therapy 5-7 days
- Evaluation for treatment failure
  - Coverage broadened within 48 hrs
  - Developed complicated pneumonia after 48 hrs
  - Readmission for pneumonia within 30 days

Newman RE et al. Pediatrics. March 2012; 129(3): e597-e604

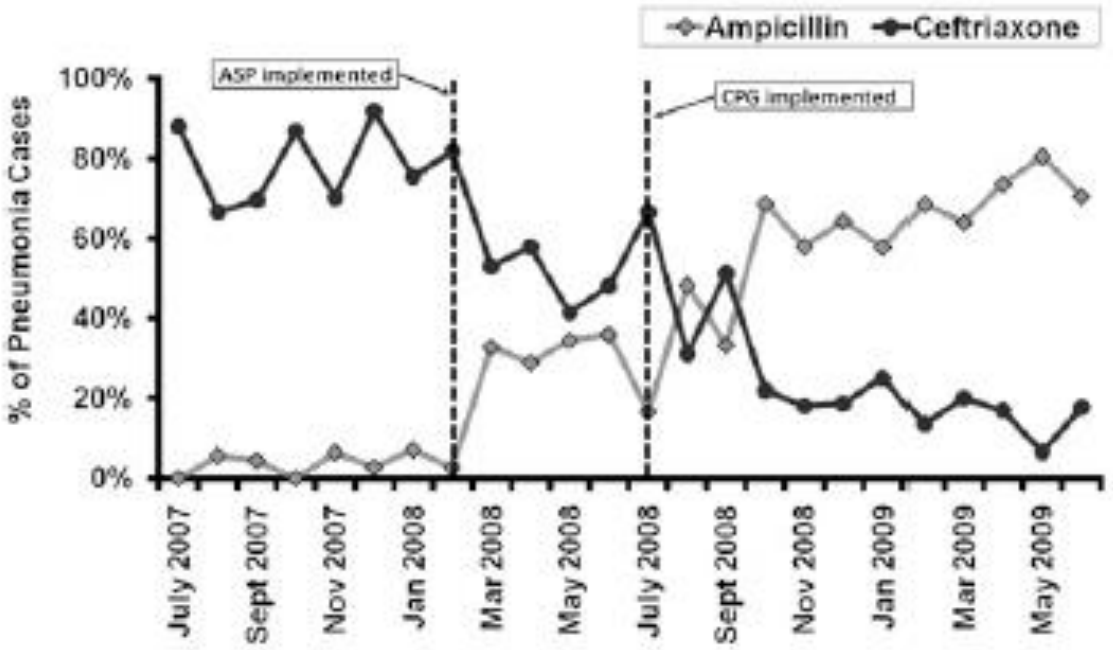

FIGURE 2

Monthly comparisons of the percentage of pneumonia cases empiric treated with ampicillin compared with ceftriaxone during the 24-month evaluation period. The ASP and CPG resulted in a significant increase in ampicillin use and a decrease in ceftriaxone use ($P < .001$).

Newman RE et al. Pediatrics. March 2012; 129(3): e597-e604

Treatment failure occurred in 1.5% (pre-CPG) vs 1% (post-CPG)

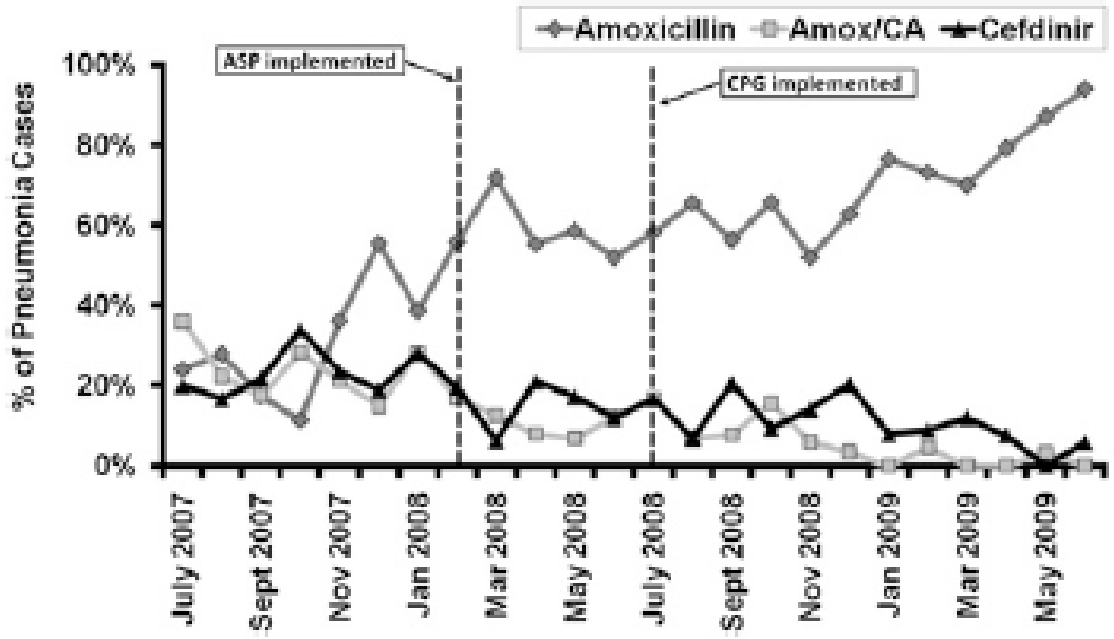

FIGURE 3

Monthly comparison of the percentage of pneumonia cases discharged on amoxicillin, amoxicillin/clavulanate, and cefdinir during the 24-month evaluation period. The ASP and CPG resulted in a significant increase in amoxicillin ($P = .001$) use. The combined ASP and CPG effect led to a reduction in cefdinir ($P < .001$) and amoxicillin/clavulanate use ($P < .001$).

Newman RE et al. Pediatrics. March 2012; 129(3): e597-e604

JAMA Pediatrics | Original Investigation

Short-Course Antimicrobial Therapy for Pediatric Community-Acquired Pneumonia
The SAFER Randomized Clinical Trial

Jeffrey M. Pernica, MD; Stuart Harman, MD; April J. Kam, MD; Redjana Carciumaru, MSc; Thuva Vanniyasingam, PhD; Tyrus Crawford, BSocSc; Dale Dalgleish, RN, BHScN; Sarah Khan, MD; Robert S. Slinger, MD; Martha Fulford, MD; Cheryl Main, MD; Marek Smieja, MD, PhD; Lehana Thabane, PhD; Mark Loeb, MD

Key Points

Question Is short-course antibiotic therapy (5 days of high-dose amoxicillin) inferior to standard care (10 days of high-dose amoxicillin) for the treatment of children aged 6 months to 10 years diagnosed with community-acquired pneumonia in an outpatient setting?

Findings In this 2-center, blinded randomized clinical trial, children treated with short-course antibiotic therapy had comparable rates of clinical cure at 14 to 21 days after enrollment compared with standard care (85.7% vs 84.1%).

Meaning Results of this study suggest that short-course therapy for pediatric community-acquired pneumonia not requiring hospitalization offers more benefit than harm and should be considered for inclusion in treatment guidelines.

Pernica JM, et al. JAMA Pediatr. doi:10.1001/jamapediatrics.2020.6735 Published online March 8, 2021.

Scout CAP, JAMA Pediatrics

January 18, 2022

Short- vs Standard-Course Outpatient Antibiotic Therapy for Community-Acquired Pneumonia in Children

The SCOUT-CAP Randomized Clinical Trial

Derek J. Williams, MD, MPH[1]; C. Buddy Creech, MD, MPH[1]; Emmanuel B. Walter, MD, MPH[2]; Judith M. Martin, MD[3]; Jeffrey S. Gerber, MD, PhD[4,5]; Jason G. Newland, MD, MSCE[6]; Lee Howard, MD[7]; Meghan E. Hofto, MD, MPH[8]; Mary A. Staat, MD, MPH[9]; Randolph E. Oler, MS[10]; Bonifride Tuyishimire, PhD[10]; Thomas M. Conrad, MS, PhD[10]; Marina S. Lee, PhD[11]; Varduhi Ghazaryan, MD, MPH[11]; Melinda M Pettigrew, PhD[12]; Vance G. Fowler Jr, MD, MHS[13]; Henry F. Chambers, MD[14]; Theoklis E. Zaoutis, MD, MSCE[15]; Scott Evans, PhD[16]; W. Charles Huskins, MD, MSc[17]; and The DMID 14-0079 Study Team

Community-acquired Pneumonia (CAP)

Community Acquired Pneumonia	
First line	
Amoxicillin	45mg/kg/dose every 12 hours (max 1000mg/dose)
First line penicillin allergy	
Clindamycin	10mg/kg/dose every 8 hours (max 600mg/dose)
Second line penicillin allergy	
Levofloxacin	< 5 years: 10mg/kg/dose every 12 hours, ≥ 5 years: 10mg/kg/dose daily (max 750mg/dose)
Not fully immunized against S. pneumoniae or H. influenzae	
Amoxicillin/clavulanate[1]	40mg/kg/dose every 12 hours (max 1000mg/dose)
Coverage for atypical pathogens	
Azithromycin	10mg/kg/dose on day 1, then 5mg/kg/dose on days 2-5
1. Concentration of amoxicillin/clavulanate suspensions vary. The preferred formulation for patients < 40kg is the 600mg amoxicillin- 42.9mg clavulanate/5mL suspension. For patients ≥ 40kg, use the 875mg amoxicillin-125mg clavulanate tablets or 400mg amoxicillin-57mg clavulanate/5mL suspension.	

- *Duration:* 5 days for most patients[3,4]

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Skin and Soft Tissue Infections

Epidemiology of SSTIs

Impetigo, bullous impetigo and ecthyma:

- Caused by either *S. aureus* or *S. pyogenes*
- *S. aureus* strains causing impetigo and ecthyma usually caused by MSSA

Cellulitis:

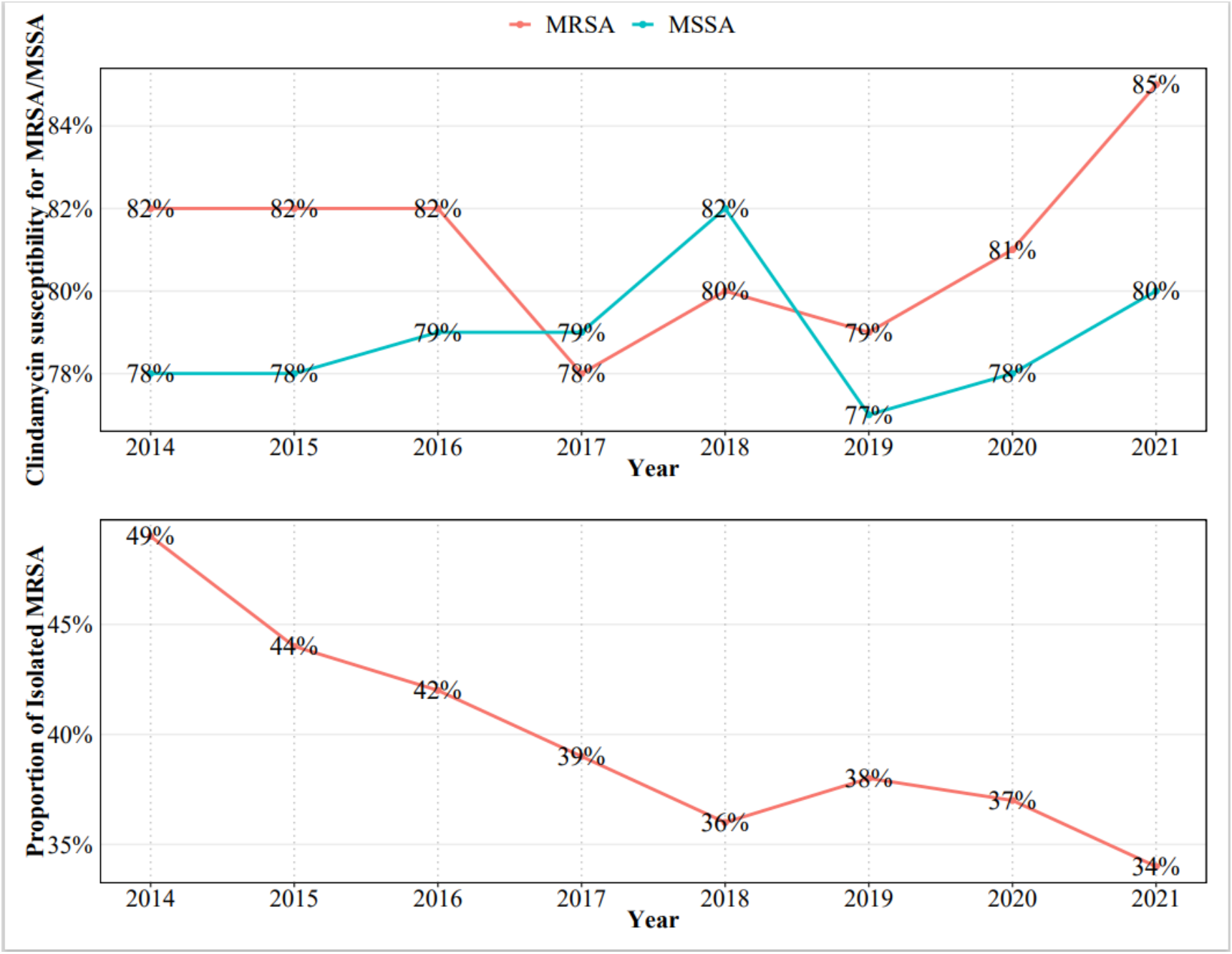
- Most frequently caused by Streptococci (often GAS)
- *S. aureus* is an uncommon cause
- MRSA is an unusual cause of typical cellulitis
- A prospective study of patients with cellulitis
  - Site had high incidence of other MRSA-related SSTIs
  - 96% treatment success with cefazolin or oxacillin

Cutaneous abscesses:

- Majority caused by *S. aureus* including MRSA

Practice Guidelines for the Diagnosis and Management of Skin and Soft Tissue Infections: 2014 Update by the Infectious Diseases Society of America (idsociety.org)

Jeng A, et al. *Medicine (Baltimore).* 2010. 89: 217-26


MRSA
MSSA
Clindamycin susceptibility for MRSA/MSSA
84%
82%
80%
78%
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79%
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Year
Proportion of Isolated MRSA
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35%
49%
44%
42%
39%
36%
38%
37%
34%
2014
2015
2016
2017
2018
2019
2020
2021
Year

Skin and Soft Tissue Infections

Cellulitis

- *Target pathogens:* GAS and *S. aureus*
- *Treatment:* Cephalexin 15mg/kg/dose every 8 hours (max 500mg/dose)
- *Duration:* 5 days and re-assess

Acute bacterial lymphadenitis

- *Target pathogens: S. aureus* and GAS
- *Treatment:* Clindamycin 10mg/kg/dose every 8 hours (max 600mg/dose)
- *Duration:* 7 days and re-assess

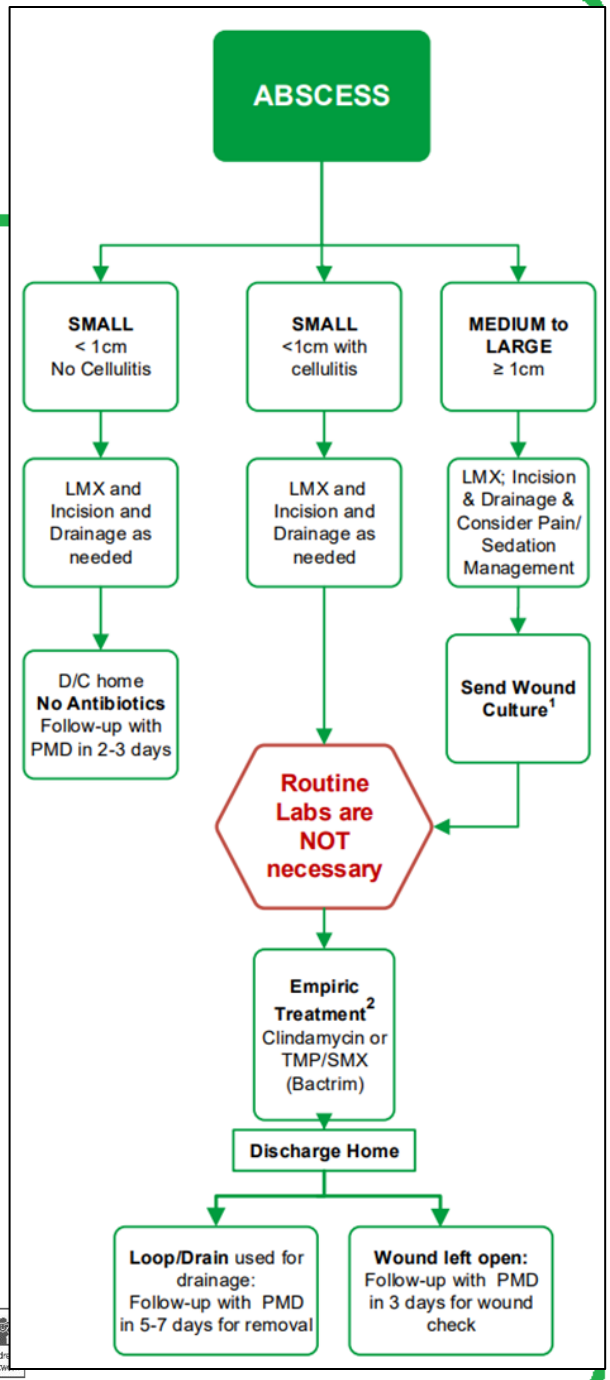
Purulent Cellulitis/Abscess

- *Target pathogens:*
- Most likely *S. aureus* (including MRSA) and GAS
- Small abscesses (< 1cm) without cellulitis can manage with drainage alone.

- *Treatment:*

- Clindamycin 10mg/kg/dose every 8 hours (max 600mg/dose)
- Trimethoprim/sulfamethoxazole (TMP/SMX) 5mg TMP/kg/dose every 12 hours (max 320mg TMP/dose or 2 double strength tablets)

- *Duration:* 7 days[5]



CHOA project on SSTI

Pediatrics. 2022 Oct 1;150(4):e2021053197. doi: 10.1542/peds.2021-053197.

Optimizing Antibiotic Treatment of Skin Infections in Pediatric Emergency and Urgent Care Centers

Susan May Wiltrakis [1], Preeti Jaggi [2 3], Lydia Lu [2], Shabnam Jain [4 3]

Affiliations + expand

PMID: 36073197 DOI: 10.1542/peds.2021-053197

Abstract

Objectives: The objective was to optimize antibiotic choice and duration for uncomplicated skin/soft tissue infections (SSTIs) discharged from pediatric emergency departments (EDs) and urgent cares (UCs).

Skin and Soft Tissue Infections

Skin infections acquired in water

- *Target pathogens:* consider Gram negative rod infections (e.g. *Aeromonas* spp if freshwater, *Vibrio* spp if saltwater, *Mycobacterium marinum* if exposure to fish tank)

Cellulitis or abscess associated with a human or domestic animal bite

- *Target pathogens:* In addition to *S. aureus* and GAS, consider oral anaerobes, *Pasteurella multocida, Capnocytophagia* spp*, Eikenella corrodens*
- For animal bites also review tetanus immunization status and consider the need for rabies prophylaxis
- *Treatment:* Amoxicillin/clavulanate 22.5mg (amoxicillin)/kg/dose every 12 hours (max 1000mg/dose)
- *Duration:* 7 days and re-assess

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Urinary Tract Infections

Urinary Tract Infections

- *Target pathogens: Escherichia coli* is the most common cause UTIs; *Klebsiella pneumoniae* is the second most common cause

- **Uncomplicated cystitis:** no fever, no back pain, and no systemic symptoms
- **Mild uncomplicated UTI:** fever but no other systemic symptoms and no flank pain
- **Pyelonephritis:** fever with other systemic symptoms such as malaise/chills and/or flank pain, nausea/vomiting

Urinary Tract Infections

- **Infants and children who are not toilet-trained:**

- Urinalysis and culture
- Urine culture by catheterization

- **Verbal toilet-trained children ≥ 2 years of age who are afebrile:**

- Urinalysis with reflex to urine culture if abnormal
- Urine culture by clean voided specimen

Urinary Tract Infections

Urinary Tract Infection	
Uncomplicated cystitis	
Nitrofurantoin[1]	1.5mg/kg/dose every 6 hours (max 100mg/dose)
Cephalexin	45mg/kg/dose every 12 hours (max 1000mg/dose)
Pyelonephritis or unclear if upper tract disease is present	
Cephalexin[2]	45mg/kg/dose every 12 hours (max 1000mg/dose)
Cefprozil	15mg/kg/dose every 12 hours (max 500mg/dose)
Cefuroxime	15mg/kg/dose every 12 hours (max 500mg/dose)
Cefixime	8mg/kg/dose once daily (max 400mg/**day**)
Cefdinir[3]	14mg/kg/dose once daily (max 600mg/**day**)
1. Nitrofurantoin can only be used for treatment of uncomplicated cystitis. 2. For febrile UTI, consider local susceptibility when choosing cephalexin. 3. Only 12-18% of cefdinir is excreted in the urine as unchanged drug.	

Most Common Bacterial Causes of UTIs in Children

- ***Escherichia coli* (65% to 75%)**
- ***Klebsiella pneumoniae* (23%)**
- *Proteus mirabilis* (7%)
- Other *Enterobacteriaceae*, *Enterococcus* sp, *Pseudomonas aeruginosa*, and *Staphylococcus saprophyticus* (1% to 4%)

Spahiu L, et al. Med Arh. 64: 88-90
Lo DS, et al. J Bras Nefrol. 35: 93-98

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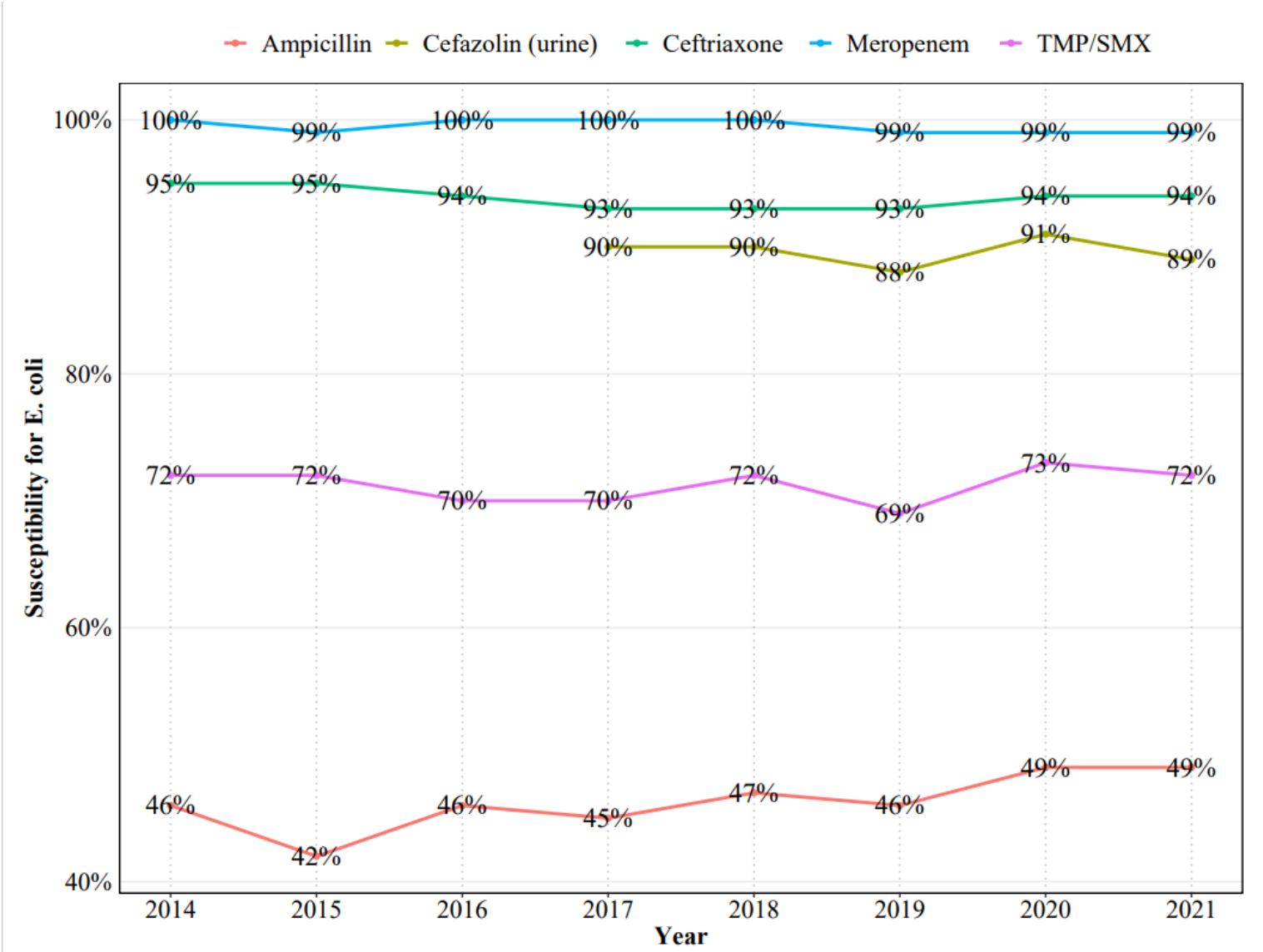
Ampicillin
Cefazolin (urine)
Ceftriaxone
Meropenem
TMP/SMX
Susceptibility for E. coli
100%
80%
60%
40%
100% 99% 100% 100% 100% 99% 99% 99%
95% 95% 94% 93% 93% 93% 94% 94%
90% 90% 88% 91% 89%
72% 72% 70% 70% 72% 69% 73% 72%
46% 42% 46% 45% 47% 46% 49% 49%
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2019
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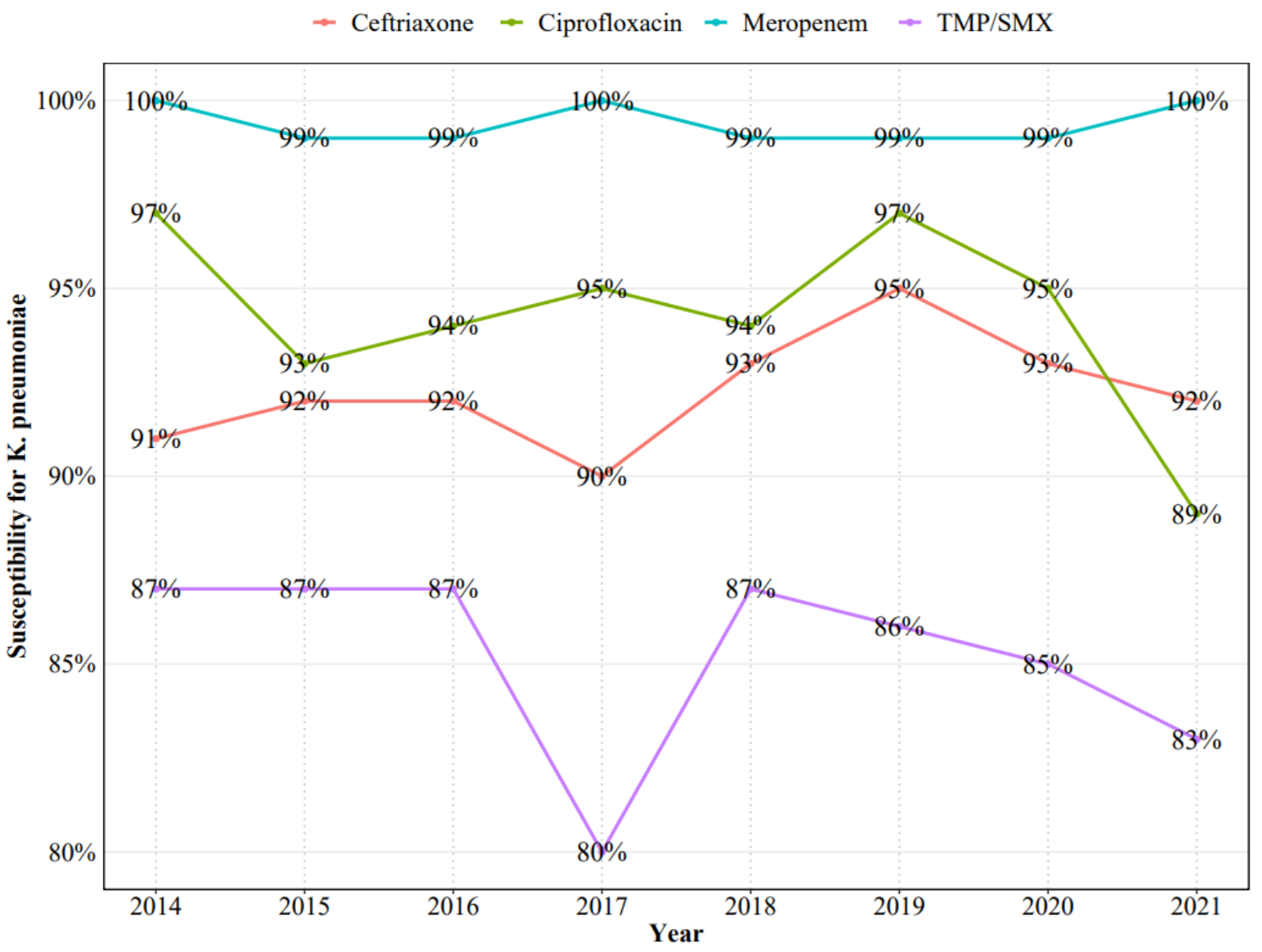
2021
Year


Ceftriaxone
Ciprofloxacin
Meropenem
TMP/SMX
Susceptibility for K. pneumoniae
100%
95%
90%
85%
80%
2014
2015
2016
2017
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2019
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2021
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100%
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80%
87%
86%
85%
83%

Trends in Multi-Drug Resistant Gram-Negative Bacilli

E. coli

Antibiotic	2014	2015	2016	2017	2018	2019	2020	2021
Ceftriaxone	95% (2058)	95% (2329)	94% (2277)	93% (2346)	93% (2413)	93% (2165)	94% (2309)	94% (2545)
Meropenem	100% (2058)	99% (2329)	100% (2277)	100% (2187)	100% (2173)	99% (1993)	99% (2003)	99% (2105)

K. pneumoniae

Antibiotic	2014	2015	2016	2017	2018	2019	2020	2021
Ceftriaxone	91% (452)	92% (563)	92% (477)	90% (547)	93% (570)	95% (436)	93% (432)	92% (410)
Meropenem	100% (452)	99% (563)	99% (477)	100% (517)	99% (489)	99% (388)	99% (375)	100% (333)

Short-Course Treatment for UTIs in Children

- *In a randomized clinical trial, there was clinical success in 95% of children assigned to a 5-day course and 99% clinical success in those that received 10 days*
- *In select patients, a longer treatment duration of up to 10 days may be indicated* [6]

Zaoutis T, et al. Short-Course Therapy for Urinary Tract Infections in Children: The SCOUT Randomized Clinical Trial. *JAMA Pediatr*. Published online June 26, 2023.

Urinary Tract Infections

Duration:

- Uncomplicated cystitis: 3-5 days
- Mild uncomplicated UTI: 5 days
- Pyelonephritis: 5 days and re-assess

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Save the date for the last lunchtime webinar in this series:

Webinar #3: November 1 – Antibiotic Dosing