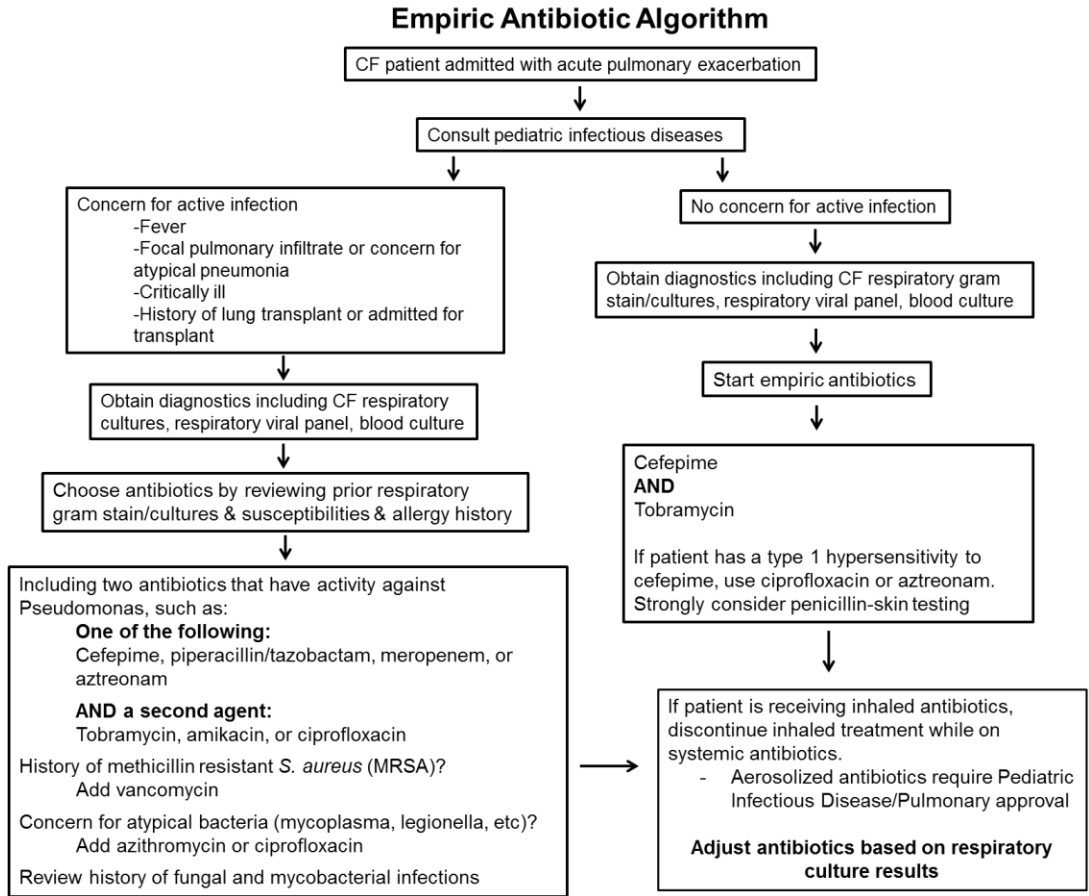


**UCLA MATTEL CHILDREN'S HOSPITAL  
PEDIATRIC CYSTIC FIBROSIS EMPIRIC ANTIBIOTIC GUIDELINE**

**Purpose:** To guide physicians in choosing antibiotics for cystic fibrosis (CF) patients admitted with an acute pulmonary exacerbation. The microbiology and allergy history of each CF patient should be reviewed at the time of admission and should be taken into consideration in devising an antibiotic plan.



**Antibiotic Doses**

Antibiotic <sup>1</sup>	Pediatric Dose <sup>1</sup>	Adult Dose/maximum dose <sup>1</sup>
Vancomycin	15mg/kg/dose Q6H	1 gram IV Q8H
Cefepime	50mg/kg/dose Q8H	2 grams Q8H
Piperacillin-tazobactam	100mg piperacillin component/kg/dose Q6H	4.5 grams IV x1 over 30 minutes, then 4.5 grams IV infused over 4 hours q8H
Meropenem	40mg/kg/dose Q8H	2 grams Q8H
Tobramycin <sup>2</sup> - Extended interval dosing	10mg/kg/dose Q24H	8mg/kg/dose Q24H
Amikacin <sup>2</sup> -Extended interval dosing	30 mg/kg/dose Q24H	24 mg/kg/dose Q24H
Ciprofloxacin- IV	10mg/kg/dose IV Q8H	400mg IV Q8H
Ciprofloxacin- PO	20mg/kg/dose PO Q12H	750-1000mg PO Q12H
Aztreonam	50mg/kg/dose Q6H	2 grams Q6H
Colistin dosed by colistin base activity	3-5mg/kg/day divided 3 doses	300mg/day (colistin base activity)

1. Renal adjustment needed in patients with renal insufficiency
2. An "Extended Interval" level 8 hours after the start of the infusion (between 6-14 hours) is recommended anytime after the first dose; peak and trough levels are unnecessary. Contact the pharmacy satellite for assessment of aminoglycoside levels

**Additional Considerations**

If patient is on azithromycin, continue this antibiotic

## Aminoglycoside Drug Monitoring

### Drug Levels for Patients with Normal Renal Function on Once Daily Dosing

-Infuse tobramycin or amikacin dose over 30 minutes.

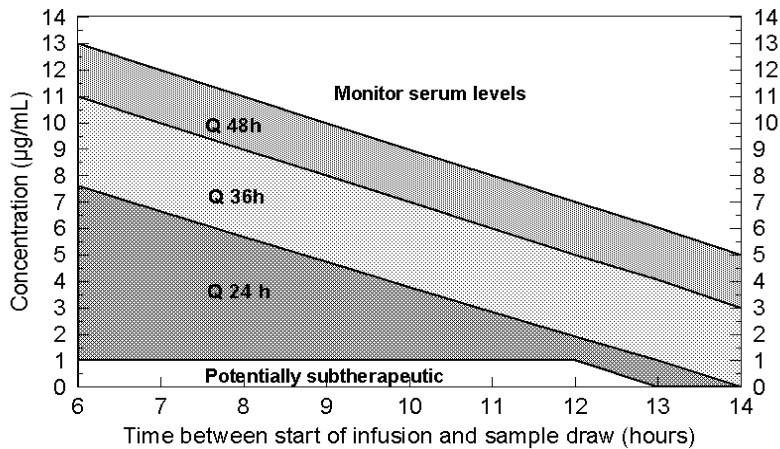
-Order an “**Extended Interval**” level **8 hours after the start of the infusion. DO NOT ORDER A RANDOM LEVEL.**

-Check Extended Interval value against the infusion start time using the nomogram.

- Dosing interval will be guided by intersection of Concentration vs Time, i.e., Q24H, Q36H, Q48H
- If the level is on or near the demarcation between two intervals, select the longer interval
- If the level EXCEEDS Q48H interval then discontinue current regimen and monitor levels until the next dose can be determined (< 1 mg/L for tobramycin and < 5 mg/L for amikacin) and/or consider a “traditional” dosing regimen.
- If the aminoglycoside level (drawn between the 6 and 14 hours) falls in the “Potentially Subtherapeutic” range then obtain 2 aminoglycoside levels at 2 hours and 8 hours after the start of the infusion

-Contact the pharmacy for individualized dosing recommendations based upon these levels.

### Extended Interval Aminoglycoside Nomogram



Concentrations on y axis refer to gentamicin. To use this chart for amikacin, divide serum amikacin concentration by two.

### Drug Levels for Patients with Abnormal Renal Function on Multiple Dose per Day Regimen

-Check a serum peak and trough around the 4<sup>th</sup> dose of amikacin or tobramycin

Antibiotic	Peak (mcg/mL)	Trough (mcg/mL)
Tobramycin	8-10	<1
Amikacin	25-35	<5