

# Antibiotic susceptibility of *Streptococcus pneumoniae* in the US in 2014

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**Background:** *Streptococcus pneumoniae* is the most common cause of community-acquired bacterial pneumonia (CABP). Resistance to empirically prescribed antibiotics is a continuing major issue.

**Methods:** 715 isolates of *Streptococcus pneumoniae* were collected from laboratories across the 9 CDC Census regions of the USA in 2014. Susceptibility to the antibiotics listed in the table below was tested according to CLSI M-24.

**Results:** 715 isolates were collected in 2014. Rates of resistance ranged from 48.8% in the case of azithromycin, 24.1% with tetracycline and 7.3% in the case of ceftriaxone. All isolates had a MIC to solithromycin of  $\leq 0.25$ mg/L. Additionally, resistance rates by drug by region were also reported.

Antimicrobial Agent	MIC <sub>50</sub>	MIC <sub>90</sub>	Range	CLSI <sup>a</sup>		
				%S	%I	%R
Solithromycin	0.008	0.25	0.002 — 1	-	-	-
Azithromycin	0.25	>32	0.03 — >32	51.3	0.3	48.4
Ceftriaxone	$\leq 0.06$	1	$\leq 0.06$ — 8	80.8	11.9	7.3 <sup>c</sup>
				92.7	6.0	1.3 <sup>b</sup>
Penicillin	$\leq 0.06$	2	$\leq 0.06$ — 8	57.2	29.5	13.3 <sup>d</sup>
				57.2	-	42.8 <sup>e</sup>
				92.7	6.3	1.0 <sup>f</sup>
Tetracycline	$\leq 0.5$	>8	$\leq 0.5$ — >8	75.2	0.7	24.1
Trimethoprim-Sulfamethoxazole	$\leq 0.5$	>4	$\leq 0.5$ — >4	69.1	12.2	18.7

<sup>a</sup>CLSI 2015 criteria; <sup>b</sup>Using non-meningitis breakpoints; <sup>c</sup>Using meningitis breakpoints; <sup>d</sup>Using Oral breakpoints; <sup>e</sup>Using parenteral meningitis breakpoints; <sup>f</sup>Using parenteral non-meningitis breakpoints

**Conclusion:** Although current guidelines recommend macrolides and tetracyclines as empiric options for the treatment of out-patient, low risk CABP, almost half of all *Streptococcus pneumoniae* strains in the USA are resistant to currently approved macrolides. Resistance and drug-related factors such as tolerability should be considered during empiric selection of antibiotics for CABP.