Organism susceptibility to antibacterials: cephalosporins

The following table provides a general guide to clinical antimicrobial susceptibilities. The table is intended to assist empirical selection of antimicrobials in the absence of laboratory confirmation of susceptibility; it is not a substitute for management advice from clinical microbiologists or infectious diseases specialists. Consider these data in conjunction with the clinical condition of the patient, site of infection, knowledge of local susceptibility patterns (which may vary) and evidence-based guidelines. Use the narrowest spectrum antibiotic that is effective to limit the development of antimicrobial resistance. When in doubt seek specialist advice.

The designation of susceptibility used in the table is 75% (an organism is deemed susceptible if at least 3 out of 4 cultures tested are susceptible to that antibiotic).

Organism	Cephalosporins								
	Moderate spectrum			Broad spectrum					
	cefalexin, cefazolin	cefaclor, cefuroxime	cefoxitin	cefotaxime, ceftriaxone	cefepime	ceftaroline	ceftazidime	ceftazidime with avibactam	ceftolozane with tazobactam
Gram-negative									
Acinetobacter spp.									
Aeromonas spp.				1		1	1		
Burkholderia cepacia							v	v	
Burkholderia pseudomallei						2			
Campylobacter jejuni and *coli*									
Citrobacter freundii				1		1	1		
Enterobacter spp.				1		1	1		
Escherichia coli									
Haemophilus influenzae									
Klebsiella spp.									
Moraxella catarrhalis									
Morganella spp.				1		1	1		
Neisseria gonorrhoeae									
Neisseria meningitidis									
Pasteurella multocida						v			
Proteus mirabilis									
Proteus vulgaris				1		1	1		
Providencia spp.				1		1	1		
Pseudomonas aeruginosa									
Salmonella spp.									
Serratia spp.				1		v	1		
Shigella spp.									
Stenotrophomonas maltophilia								v	
Yersinia spp.							v		

1 use of broad-spectrum cephalosporins may result in emergence of resistance and treatment failure
2 susceptible *in vitro*, insufficient or limited clinical data
3 ceftriaxone used with amoxicillin for synergistic effect
4 MRSA: implies resistance to all beta-lactams (except ceftaroline)
5 can be used if susceptible to beta-lactam antibacterial
6 cefaclor is resistant
7 may be used with other agents

Legend

	susceptible
v	variable
	resistant
	no data available or antibacterial not recommended

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Organism	Cephalosporins								
	Moderate spectrum			Broad spectrum					
	cefalexin, cefazolin	cefaclor, cefuroxime	cefoxitin	cefotaxime, ceftriaxone	cefepime	ceftaroline	ceftazidime	ceftazidime with avibactam	ceftolozane with tazobactam
Gram-positive									
Corynebacterium jeikeium									
Enterococcus faecalis				3		2			
Enterococcus faecium									
Listeria spp.									
Staphylococcus aureus									
Staphylococcus aureus (MRSA)[4]									
Staphylococcus epidermidis	5								
Staphylococcus lugdunensis									
Staphylococcus saprophyticus									
Streptococcus - group A, B, C, G									
Streptococcus anginosus									
Streptococcus pneumoniae									
Viridans streptococcus group		6					v	v	
Anaerobes									
Actinomyces									
Bacteroides fragilis group									
Clostridioides difficile									
Clostridium perfringens									
Cutibacterium (Propionibacterium) acnes									
Fusobacteria spp.						2			
Peptostreptococcus spp.						2			
Prevotella melaninogenica									
Miscellaneous									
Chlamydophila, *Chlamydia* spp.									
Legionella spp.									
Mycobacterium avium complex									
Mycobacterium tuberculosis									
Mycoplasma pneumoniae									
Nocardia spp.				v,7					

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