

# Infectious Syndromes

## Specific Treatment of Select Bacterial Organisms at UCLA

These guidelines are intended to provide assistance in selection of appropriate antimicrobial therapy for specific organisms. This is not intended to be a comprehensive list of all bacteria, only commonly-isolated ones. Some of the organisms listed, such as *Propionibacterium acnes* and *Bacillus* spp, may represent contaminating organisms when isolated from blood culture.

**Treatment should be guided by susceptibility testing, when available.** The recommendations given below are meant to serve as guidelines. They should NOT supplant clinical judgment or Infectious Diseases consultation.

Note that antimicrobials may have differing pharmacokinetic profiles, such as CSF penetration or urinary concentration. Therefore depending on the clinical syndrome and site of infection, not all listed antimicrobials are appropriate for the listed organisms. **Please feel free to contact the Antimicrobial Stewardship Program help desk at 310-267-7567 with questions.**

Organisms	First-line treatment*	Alternate treatment*
<i>Acinetobacter</i>  Multi-drug resistant	meropenem  <b>Consult ID</b>	piperacillin/tazobactam, ampicillin-sulbactam, cefepime, fluoroquinolone, amikacin, doxycycline, TMP/SMX.
<i>Bacillus</i> spp (not <i>B. anthracis</i> )	vancomycin	clindamycin, ertapenem, fluoroquinolone
<i>Bacteroides fragilis</i>	metronidazole	ertapenem, piperacillin/tazobactam, clindamycin, cefoxitin, tigecycline
<i>Bordetella pertussis</i>	macrolide	TMP/SMX
<i>Campylobacter jejuni</i>	erythromycin, azithromycin	doxycycline, fluoroquinolone, gentamicin
<i>Chlamydophila pneumoniae</i>	doxycycline, azithromycin	Fluoroquinolone
<i>Citrobacter freundii</i>	ertapenem	fluoroquinolone, aminoglycoside, TMP/SMX, piperacillin/tazobactam, cefepime, tigecycline, aztreonam

<i>Clostridium difficile</i>	vancomycin (oral)	metronidazole
<i>Clostridium perfringens</i>	clindamycin	penicillin, metronidazole, clindamycin, piperacillin/tazobactam, ertapenem
<i>Corynebacterium</i> Group JK	vancomycin	linezolid, daptomycin
<i>Enterobacter</i>	cefepime or carbapenem	fluoroquinolone, TMP/SMX, cefepime, piperacillin/tazobactam, aminoglycoside, tigecycline, aztreonam
<i>Enterococcus</i> Ampicillin-sensitive	ampicillin, amoxicillin, penicillin	vancomycin, linezolid, piperacillin/tazobactam, daptomycin, tigecycline
Ampicillin-resistant, vancomycin-sensitive	vancomycin, (amoxicillin OK for urine isolates)	linezolid, daptomycin
VRE	linezolid (ampicillin or amoxicillin for uncomplicated cystitis)	daptomycin, tigecycline
Add gentamicin or streptomycin when cidal activity is required (eg for endocarditis) and agents are susceptible for synergy		
<i>Escherichia coli</i>	ceftriaxone, cefazolin, cefepime	fluoroquinolone, aminoglycoside, pip/tazo, TMP/SMX, aztreonam
ESBL-producing strains	ertapenem	
<i>Fusobacterium</i> sp	penicillin	metronidazole, clindamycin, ampicillin/sulbactam, carbapenem
<i>Haemophilus influenzae</i> (serious infections only)	ceftriaxone	fluoroquinolone, TMP/SMX, azithromycin, clarithromycin, piperacillin/tazobactam, doxycycline, cephalosporins
<i>Klebsiella pneumoniae</i>	ceftriaxone, cefepime, ertapenem	fluoroquinolone, aminoglycoside, TMP/SMX, piperacillin/tazobactam, carbapenem, tigecycline
carbapenem-resistant strains	<b>Consult ID</b>	
<i>Legionella</i>	levofloxacin, azithromycin +/- rifampin	clarithromycin, doxycycline, TMP/SMX, any of these three +/- rifampin

<i>Listeria monocytogenes</i>	ampicillin or penicillin +/- gentamicin <i>Never cephalosporins</i>	TMP/SMX
<i>Moraxella catarrhalis</i>	ceftriaxone	fluoroquinolone, azithromycin, clarithromycin, TMP/SMX, cefepime, pip/tazo
<i>Morganella morganii</i>	cefepime, fluoroquinolone	ertapenem, pip/tazo, aminoglycoside, TMP/SMX, aztreonam
<i>Mycoplasma pneumoniae</i>	azithromycin	doxycycline, fluoroquinolone
<i>N gonorrhoeae</i>	ceftriaxone + azithromycin	cefixime + azithromycin or doxycycline
<i>N meningitidis</i> (see section on CNS infections)  Prophylaxis (with Hospital Epidemiology input)	penicillin, ceftriaxone	ampicillin, chloramphenicol  ciprofloxacin, rifampin
<i>Pasteurella multocida</i>	penicillin, ampicillin, amoxicillin, amoxicillin/clavulanate (if polymicrobial)	Doxycycline, ceftriaxone, TMP/SMX, amp/sulbactam, pip/tazo
<i>Propionibacterium acnes</i>	Penicillin	clindamycin, doxycycline, ertapenem
<i>Proteus</i> spp <i>P. mirabilis</i>  <i>P. vulgaris</i>	ampicillin, amoxicillin, cephalosporin  ertapenem	fluoroquinolone, aminoglycoside, TMP/SMX, pip/tazo, ertapenem  fluoroquinolone, aminoglycoside, TMP/SMX, pip/tazo, ceftriaxone, cefepime, aztreonam
<i>Providencia</i>	ertapenem	fluoroquinolone, aminoglycoside, TMP/SMX, pip/tazo, ceftriaxone, cefepime, aztreonam
<i>Pseudomonas aeruginosa</i>  Multi-drug resistant	Cefepime or meropenem  <b>Consult ID</b>	ciprofloxacin, piperacillin/tazobactam, aminoglycoside
<i>Serratia</i> spp	ertapenem	fluoroquinolone, aminoglycoside, cefepime, TMP/SMX, pip/tazo, aztreonam

<p><i>Staphylococcus</i> spp Methicillin-S (MSSA)</p> <p>Methicillin-R (MRSA)</p> <p>Vancomycin-intermediate or resistant (VISA, VRSA)</p>	<p>oxacillin, cefazolin, dicloxacillin</p> <p>vancomycin</p> <p><b>Consult ID</b></p>	<p>clindamycin, TMP/SMX, doxycycline, ceftriaxone</p> <p>linezolid, daptomycin, TMP/SMX, doxycycline, clindamycin</p>
<p><i>Stenotrophomonas maltophilia</i></p>	<p>TMP/SMX</p> <p>Typically causes colonization (e.g. airways) and no treatment needed unless isolated from a sterile site</p>	<p>levofloxacin, meropenem, tigecycline, doxycycline</p>
<p><i>Streptococcus</i> spp <i>S pneumoniae</i></p> <p>Penicillin-susceptible</p> <p>Penicillin-resistant</p> <p>Group B Streptococci</p> <p>Viridans group</p>	<p>penicillin, amoxicillin</p> <p>Meningitis: vancomycin + ceftriaxone +/- rifampin</p> <p>Other infections: levofloxacin, vancomycin, ceftriaxone</p> <p>penicillin, cephalosporins</p> <p>penicillin, cephalosporin, for endocarditis base treatment on penicillin susceptibility testing</p>	<p>ceftriaxone, macrolide, clindamycin, doxycycline, fluoroquinolone</p> <p>linezolid</p> <p>clindamycin, vancomycin</p> <p>vancomycin, levofloxacin</p>
<p><i>Ureaplasma</i></p>	<p>Macrolide, doxycycline</p>	

\*Depending on susceptibility. Testing may or may not be performed for all of these, depending on the isolate and the source of infection.

Modified from Choice of Antibacterial Drugs. Treat Guidel Med Lett. 2007;5:33-50. Erratum in: Treat Guidel Med Lett. 2007;5:58.