

# 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 hotline at 310-267-7567 with questions.**

Organisms	First-line treatment*	Alternate treatment*
<i>Acinetobacter</i>  Multi-drug resistant	meropenem (not ertapenem)  <b>consult ID</b>	pip/tazo, 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>Bordatella pertussis</i>	macrolide	TMP/SMX
<i>Campylobacter jejuni</i>	erythromycin, azithromycin	doxycycline, fluoroquinolone, gentamicin
<i>Chlamydomphila pneumoniae</i>	doxycycline, macrolide	fluoroquinolone, tigecycline
<i>Citrobacter freundii</i>	ertapenem	fluoroquinolone,

		aminoglycoside, TMP/SMX, piperacillin/tazobactam, cefepime, tigecycline, aztreonam
<i>Clostridium difficile</i>	metronidazole	vancomycin (oral)
<i>Clostridium perfringens</i>	penicillin	metronidazole, clindamycin, piperacillin/tazobactam, ertapenem
<i>Corynebacterium</i> Group JK	vancomycin	linezolid, daptomycin, dalbapristin/quinupristin
<i>Enterobacter</i>	ertapenem or meropenem	fluoroquinolone, TMP/SMX, cefepime, pip/tazo, aminoglycoside, tigecycline, aztreonam
<i>Enterococcus</i> Ampicillin-sensitive	ampicillin, amoxicillin, penicillin	vancomycin, linezolid, piperacillin/tazobactam, dalbapristin/quinupristin ( <i>E faecium</i> only), daptomycin, tigecycline
Ampicillin-resistant, vancomycin-sensitive	vancomycin	linezolid, daptomycin, dalbapristin/quinupristin ( <i>E faecium</i> only)
VRE	linezolid	daptomycin, dalbapristin/quinupristin ( <i>E faecium</i> only), 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, tigecycline, aztreonam
ESBL-producing strains	ertapenem	
<i>Fusobacterium</i> sp	penicillin	metronidazole, clindamycin, ampicillin/sulbactam, carbapenem
<i>Haemophilus influenzae</i>	ceftriaxone	fluoroquinolone, TMP/SMX,

(serious infections only)		azithromycin, clarithromycin, pip/tazo, doxycycline, cephalosporins
<i>Klebsiella pneumoniae</i> ESBL-producing strains carbapenem-resistant strains	ceftriaxone, cefepime ertapenem <b>consult ID</b>	fluoroquinolone, aminoglycoside, TMP/SMX, pip/tazo, carbapenem, tigecycline
<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>	2nd or 3rd-gen cephalosporin	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>	Check with and report to LA County 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, amox/clav (if polymicrobial)	Doxycycline, ceftriaxone, TMP/SMX, amp/sulbactam, pip/tazo
<i>Propionibacterium acnes</i>	Penicillin	clindamycin, doxycycline, ertapenem
<i>Proteus</i> sp		

<i>P mirabilis</i>	ampicillin, amoxicillin, cephalosporin	fluoroquinolone, aminoglycoside, TMP/SMX, pip/tazo, ertapenem
<i>P vulgaris</i>	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>  See section on “double-coverage” of gram-negatives  Multi-drug resistant	Cefepime or meropenem, plus gentamicin or ciprofloxacin until susceptibilities are known  <b>Consult ID</b>	ciprofloxacin, levofloxacin, pip/tazo
<i>Serratia</i> sp	ertapenem	fluoroquinolone, aminoglycoside, cefepime, TMP/SMX, pip/tazo, aztreonam
<i>Staphylococcus</i> sp Methicillin-S  Methicillin-R (MRSA)  Vancomycin-intermediate or resistant (VISA, VRSA)	oxacillin, cefazolin, dicloxacillin  vancomycin  <b>Consult ID</b>	clindamycin (if S and no inducible resistance), TMP/SMX, doxycycline, cefepime, ceftriaxone, pip/tazo, ertapenem  linezolid, daptomycin, for mild to moderate infections or step-down therapy: TMP/SMX, doxycycline
<i>Stenotrophomonas maltophilia</i>	TMP/SMX  Typically causes colonization (e.g. airways) and no treatment needed unless isolated from a	levofloxacin, tigecycline, doxycycline

	sterile site,	
<i>Streptococcus</i> sp <i>S pneumoniae</i> Penicillin-susceptible	penicillin, amoxicillin	ceftriaxone, macrolide, clindamycin, doxycycline, fluoroquinolone
Penicillin-resistant	Meningitis: vancomycin + ceftriaxone +/- rifampin  Other infections: levofloxacin, vancomycin, ceftriaxone	linezolid, dalfopristin/quinupristin,
Beta Streptococci	penicillin, cephalosporins	macrolide, clindamycin, vancomycin
Viridans group	penicillin, cephalosporin, for endocarditis base treatment on penicillin susceptibility testing	vancomycin, levofloxacin
<i>Ureaplasma</i>	Macrolide, doxycycline	

\*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.