Antimicrobial Dosing Guidelines for Adults

[milligrams/dosing interval in hours unless otherwise specified]

Doses are for 70 kg adults; smaller or larger patients, or those on dialysis may require additional dosage adjustments

Antimicrobial doses in chart represent usual initial adult doses for moderate to severe infections due to susceptible organisms. Specific disease states or individual patients may warrant dosages that differ from the recommendations. Please contact the pharmacist serving your patient care area or the Drug Information Service Center (716-2037) for more information.

		CREATININE CLEARANCE (mL/min)				
Drug & Administration Route		**> 80**	**50-80**	**30-50**	**10-30**	**< 10**
PENICILLINS						
amoxicillin	po	250-500mg/q8h or 875mg/q12h		250-500mg/q8-12h		250-500mg/q24h
amoxicillin/ clavulanate	po	500 mg/q8h or 875 mg/q12h			250-500mg/q12h	250-500mg/q24h
ampicillin[1 LD]	iv	500-2000mg/q4-6h		500-2000mg/q8h	500-2000mg/q12h	500-2000mg/q12-24h
ampicillin / sulbactam [LD]	iv	1500-3000mg/q6h		1500-3000mg/q6-8h	1500-3000mg/q12h	1500-3000mg/q12-24h
dicloxacillin	po	125-1000mg/q6h	No adjustment in renal dysfunction			
nafcillin	iv	1000-2000mg/q4-6h	No adjustment in renal dysfunction			
oxacillin	iv	1000-2000mg/q4-6h	No adjustment in renal dysfunction			
penicillin G	iv	1-4 mU[2]/q4-6h		1-3 mU/q4-6h		1-2 mU/q4-6h
piperacillin [LD]	iv	3000-4000mg/q4-6h	3000-4000mg/q6h	3000-4000mg/q8h	3000-4000mg/q12h	3000-4000mg/q12h
piperacillin / tazobactam [LD]	iv	3375mg/q6h[3]		2250mg/q6h		2250mg/q8h
ticarcillin / clavulanate [LD]	iv	3100mg/q4-6h		2000mg/q4-6h	2000mg/q8h	2000mg/q12h
MISCELLANEOUS ANTIMICROBIALS						
azithromycin	po/iv	250-500mg/q24h	No adjustment in renal dysfunction			
aztreonam[RST LD]	iv	1000-2000mg/q6-8h (use q6 in neutropenia)		1000-2000mg/q8h	1000mg/q8h or 2000mg/q12h	500-1000mg/q12h
ciprofloxacin	po	250-750mg/q12h			250-750mg/q24h	
	iv	400mg/q8-12h			400mg/q24 or 200mg/q12h	
clarithromycin	po	250-500mg/q12h			125-250mg/q12 or 250-500mg/q24h	
clindamycin	po	150-450mg/q6-8h	No adjustment in renal dysfunction			
	iv	600-900mg/q8h				
colistimethate If obese, use lean body weight (round dose to nearest 25mg)		1.7mg/kg/q8h	2mg/kg/q12h	1.5mg/kg/q12h	2mg/kg/q24h	2.5mg/kg/q48h or 1.25mg/kg q24h
dapsone	po	100mg/q24h				50mg/q24h
daptomycin[RST]	iv	4 or 6mg/kg/q24h[15]			4 or 6mg/kg/q48h[15]	
doripenem[LD]		500mg/q8h		250mg/q8h	250mg/q12h	250mg/q24h
doxycycline /minocycline	po/iv	100mg/q12h	No adjustment in renal dysfunction			
ertapenem[RST]	im/iv	1000mg/q24h			500mg/q24h	Consider doripenem
linezolid[RST]	po/iv	600mg/q12h	No adjustment in renal dysfunction			
meropenem[RST LD]	iv	1000mg/q8 or 500mg/q6h[16]		1000mg/q12h or 500mg/q8h	500mg/q12h	500mg/q24h
metronidazole	po	500mg/q6-12h			500mg/q8-12h	
	iv	500mg/q6h			500mg/q8-12h	
moxifloxacin	po/iv	400 mg/q24h	No adjustment in renal dysfunction			
nitrofurantoin (Macrodantin)	po	50-100mg/q6h		Not effective		
pentamidine	iv	3-4mg/kg/q24h			3-4mg/kg/q24-36h	3-4mg/kg/q48h
quinu/dalfopristin[RST]	iv	7.5mg/kg/q8-12h	No adjustment in renal dysfunction			
tigecycline [RST]		100mg x 1 then 50mg/ q12h	No adjustment in renal dysfunction			

Drug & Administration Route	CREATININE CLEARANCE (mL/min) > 80	50-80	30-50	10-30	< 10
TMP/SMX[4] po/iv					
UTI	160mg (1 DS tablet)/q12h			160mg/q24h	160mg/q48h
S. maltophilia or Nocardia spp.	10-15mg/kg/day divided q6-8h			7-12mg/kg/day divided q8-12h	5-7mg/kg/day divided q12-24h
PCP	15-20mg/kg/day divided q6h			12-15mg/kg/day divided q6-8h	7-10mg/kg/day divided q8-12h
CA-MRSA	320mg (2 DS tablets)/q12h			160mg/q12h	160mg/q24h
CEPHALOSPORINS					
cefazolin iv	1000-2000mg/q8h			1000-2000mg/q12h	1000-2000mg/q24h
cephalexin po	250-1000mg/q6h	250-500mg/q8h	250-500mg/q8-12h		250-500mg/q12-24h
cefdinir po	300mg/q12h			300mg/q24h	
cefixime po	400mg once daily[17]		300mg /24h		200mg/q24h
cefotetan iv	1000-2000mg/q12h			1000-2000mg/q24h	1000-2000mg/q48h
cefoxitin iv	1000-2000mg/q6h		1000-2000mg/q8h	1000-2000mg/q12h	1000-2000mg/q24h
cefpodoxime po	100-400mg/q12h			100-400mg/q24h	100-400mg/tiw[8]
cefuroxime po	250-500mg/q12h				250-500mg/q12-24h
LD iv	750-1500mg/q8h			750mg/q12h	750mg/q24h
cefotaxime LD iv	1000-2000mg/q6-8h	1000-2000mg/q8h	1000-2000mg/q8-12h	1000-2000mg/q12h	1000-2000mg/q24h
ceftazidime RST LD iv	1000-2000mg/q8-12h		1000mg/q12h	1000mg/q24h	500-1000mg/q24h
ceftriaxone[5] iv	1000-2000mg/q24h	No adjustment in renal dysfunction			
cefepime [6] LD iv	1000-2000mg/q12h		1000-2000mg/q24h	500-1000mg/q24h	
ANTIVIRALS					
abacavir po	300mg/q12h or 600mg/q24h	No adjustment in renal dysfunction			
acyclovir					
treatment po	200-800mg/q8h or 5x/d[7]		200-800mg/q8h or 5x/d[7]	200-800mg/q8h	200-800mg/q12h
treatment iv	5-10mg/kg q8h (use ideal/lean body weight)		5-10mg/kg/q12h	5-10mg/kg/q24h	2.5-5mg/kg/q24h
prophylaxis po	800mg-1600mg total per 24 hrs (e.g. 400mg/q8-12h, 800mg/q12h)		400mg/q12h	400mg/q24h	
atazanavir po	400mg/q24h; 300mg/q24h w/Ritonavir	No adjustment in renal dysfunction			
darunavir po WITH RITONAVIR	600mg/q12h or 800mg/q24h	No adjustment in renal dysfunction			
efavirenz po	600mg/q24h	No adjustment in renal dysfunction			
emtricitabine po	200mg/q24h		200mg/q48h	200mg/q72h	200mg/q96h
etravirine po	200mg BID with food	no adjustment in renal dysfunction			
fosamprenavir po	PI-naïve:1400mg/q12h or 1400mg/q24h w/Ritonavir PI-exp: 700mg/q12h w/Ritonavir	No adjustment in renal dysfunction			
ganciclovir iv					
induction LD	5mg/kg/q12h for 2-3 weeks	2.5mg/kg/q12h	2.5mg/kg/q24h	1.25mg/kg/q24h	1.25mg/kg/tiw[8]
maintenance	5mg/kg/q24h	2.5mg/kg/q24h	1.25mg/kg/q24h	0.625mg/kg/q24h	0.625 mg/kg/tiw[8]
lamivudine po	150mg/q12h or 300 mg/q24h		150mg/q24h		50-150mg/q24h
foscarnet iv	60mg/kg/q8h or 90mg/kg/q12h (induction) 90-120mg/kg q24h (maintenance)	Adjustment required for CrCl ≤ 100 mL/min: consult package insert or call Drug Information (6-2037) for more information.			
lopinavir/ritonavir po	2 tablets/q12h or 4 tabs q24h	No adjustment in renal dysfunction			
nevirapine[9] po	200mg/q12h or 400mg/q24h	No adjustment in renal dysfunction			

Drug & Administration Route	CREATININE CLEARANCE (mL/min) > 80	50-80	30-50	10-30	< 10
raltegravir	400mg BID	No adjustment in renal dysfunction			
saquinavir (tablets) po WITH RITONAVIR	1000mg/q12h	No adjustment in renal dysfunction			
tenofovir po	300 mg/q24h		Consider alternate drug in mild-moderate renal dysfunction		300mg/qweek
tipranavir po WITH RITONAVIR	500mg/q12h	No adjustment in renal dysfunction			
valacyclovir po *Genital herpes* *initial epidose*	1000 mg/q12h x 10days			1000 mg/q24h	500mg/q24h
recurrent	1000 mg/q24h x 5 days, or 500mg/q12h x 3days (If HIV+: 1000 mg/q12h x 5-10 days)			1gm q48h x 3 doses or 500mg/q24h x 3 days (If HIV+: 1000 mg/q24h x 5-10 days)	
suppressive	(if HIV+, or 10+ recurrences /year: 500mg /q12h)			500mg/q48h (if HIV+, or 10+ recurrences/year: 500mg /q24h)	
Varicella zoster	1000 mg/q8h		1000 mg/q12h	1000 mg/q24h	500mg/q24h
valganciclovir po *induction*	900mg/q12h	450mg/q12h	450mg/q24h	450mg/q2 days	450mg after every other dialysis
maintenance	900mg/q24h	450mg/q24h	450mg/q2 days	450mg/biw[13]	
zidovudine (AZT) po	300mg/q12h				100mg/q8h or 200mg/q12h
ANTIMYCOBACTERIALS					
ethambutol po	15-25mg/kg/q24h (max dose/day = 2000mg)				15-25mg/kg tiw[8] (after dialysis)
isoniazid po	300mg/q24h	No adjustment in renal dysfunction			
rifabutin po	300mg/q24h	No adjustment in renal dysfunction			
rifampin po/iv	600mg/q24h	No adjustment in renal dysfunction			
pyrazinamide po	25-35mg/kg/q24h (max dose/day = 3000mg)				25-35mg/kg tiw[8] (after dialysis)
ANTIFUNGALS					
amphotericin B[10] iv	0.25-1.5mg/kg/q24h, no adjustment in renal dysfunction				
amphotericin B lipid complex[RST] iv	3 or 5mg/kg/q24h, no adjustment in renal dysfunction				
fluconazole[11 LD] po/iv	100-400mg/q24h			100-200mg/q24h	
flucytosine § po	25 mg/kg/q6h		25 mg/kg q8h	25mg/kg/q12h	25 mg/kg/q24h
itraconazole § po	200mg/q8-24h	No adjustment in renal dysfunction			
micafungin[RST 14] iv	100mg/q24h	No adjustment in renal dysfunction			
voriconazole §[RST] po (loading dose)[12]	6mg/kg/q12h x 2 doses (round doses to nearest 50mg)		No adjustment in renal dysfunction, but IV administration not recommended		
(induction)[12]	4mg/kg/q12h x 1 week (round doses to nearest 50mg)				
(maintenance)	200mg/q12h				

§ Serum concentrations may be useful in optimizing therapy; TMP-SMX = trimethoprim-sulfamethoxazole; RST=Restricted, requires CAUSE/ID approval [1] For endocarditis or meningitis, recommended dose is 2000mg IV q4h; [2] mU = million units; [3] 4500 mg IV q6h for *Pseudomonas* spp. Infection: 4500mg IV q6h / 3375mg/q6h / 2250mg/q6h; [4] Dosing based on trimethoprim component; [5] For treatment of meningitis, recommended dosing is 2000mg/q12h; For the treatment of endocarditis, 2000mg/q24h; [6] For treatment of fever of neutropenia or meningitis, dose is 2000mg q8h; [7] 5x/d = 5 times a day; [8] tiw = 3 times weekly; [9] When initiating nevirapine, dose 200mg/q24h x first 2 weeks; [10]May use up to 1.5 mg/kg for Aspergillus; [11] Load of twice the maintenance dose can be given for most infections; [12] Round PO doses to nearest 50mg; [13]biw = twice weekly; [14]Use 100-150mg/q24h for invasive Aspergillosis; LD=Consider larger initial "loading" dose when renal function is poor. [15] Use 8mg/kg/dose for bacteremia with vancomycin-resistant enterococci; [16]Dosing for meningitis 2000mg q8h / 2000mg q12h / 1000mg q12h / 1000mg q24h; [17]Disseminated gonorrhea after IV therapy 400mg q12h

Creatinine Clearance Calculation - *Adult Patients*

CrCl (male)= $\frac{(140 - \text{age}) \times (\text{LBW or TBW*})}{\text{SCr} \times 72}$

*whichever is lower

CrCl (female) = (CrCl male) x (0.85)

LBW = Lean Body Weight in kilograms (kg)

TBW = Total Body Weight in kilograms (kg)

LBW (male) = 50 + (2.3 x # inches over 5' tall)

LBW (female) = 45.5 + (2.3 x # inches over 5' tall)

SCr= Serum creatinine concentration in mg/dL

Equation may overestimate renal function in patients with decreased muscle mass.