

		Recommended Dosing Regimens in Adult Patients							Comments		
<i>This dosing recommendations are based on published literature and established clinical practices. They should not replace clinical judgement, are intended to provide initial guidance, and may be modified depending on the individual patient. Please call ID pharmacy (pager 9407) for additional questions.</i>											
		Creatinine Clearance (mL/min)³									
Antimicrobials (\$/Day) ⁴	R/U/24H/NF ²	Specific Indications	Greater than 50	30-50	10-29	Less than 10	HD ⁴	CRRT (CVVH) ⁵	Dosing weight ^{6,7}		
Acyclovir IV (\$5)	U	Mucocutaneous herpes simplex infections	5 mg/kg q8h	5 mg/kg q12h	5 mg/kg q24h	2.5 mg/kg q24h ⁴		5 mg/kg q24h	IBW ⁷	Hydration should be co-administered with IV acyclovir. The standard recommended amount is 1 mL of fluid per 1 mg of acyclovir to reduce the risk of renal tubular damage.	
		Herpes simplex encephalitis Herpes zoster encephalitis Varicella zoster	10 mg/kg q8h	10 mg/kg q12h	10 mg/kg q24h	5 mg/kg q24h ⁴		10 mg/kg q24h	AdjBW ⁷		
Amoxicillin PO (\$0.15)	U		250-500 mg q8h	250-500 mg q12h		250-500 mg q24h	500 mg q24h ⁴	250-500 mg q12h			
Amoxicillin/clavulanate PO (\$0.80)	U		875 mg q12h		250-500 mg q12h	250-500 mg q24h	No data	No data			
Liposomal amphotericin B (Ambisome®) (\$493)	24H	Aspergillosis, Candidiasis, other molds	3 – 5 mg/kg q24h							Non-obese: TBW ⁷	Consider 500 mL of normal saline over 2 hours before and after dose to minimize nephrotoxicity; monitor Mg, K, SCr +/- with flucytosine
		Cryptococcosis	3 – 4 mg/kg q24h								
		Febrile neutropenia	3 mg/kg q24h							Obese ⁶ : AdjBW ⁷	
Ampicillin IV (\$14)	U	UTI, SSTI	1 g q6h	1 g q8h		1 g q12h	1 g q 12h	1 g q8h			
		Bacteremia, Intraabdominal	2 g q4-6h	2 g q6-8h		2 g q8h	1 g q8-12h	2 g q12-24h ⁴	2 g q8h		
		Meningitis/endocarditis	2 g q4h	2 g q6h	2 g q8h	1 g q8h	2 g q12h ⁴	2 g q8h			
Ampicillin/sulbactam(\$10)	R		1.5 – 3 g q6h	1.5 – 3 g q8h	1.5 – 3 g q12h	1.5 – 3 g q24h	1.5 – 3 g q24h ⁴	3 g q8-12h		Pre-approved for liver transplant surgery prophylaxis (48h), surgical oncology hepatobiliary procedures (48h), ENT, NICU for NEC, OB-GYN, animal bites in ED, and organ donation protocol	
Azithromycin PO (\$3) Azithromycin IV (\$12)	U		250 – 500 mg q24h								
Aztreonam (\$150)	R	Usual dose	1 – 2 g q8h		1 – 2 g q12h	1 g q24h	1 g q24h ⁴	1 - 2 g q12h		Pre-approved for surgical prophylaxis for patients with severe beta-lactam allergy up to 1-2g x2 doses 1 st dose in sepsis – Use STOP Sepsis order set <i>Pseudomonas</i> MIC >8 consider 2 g q6h	
		Meningitis, <i>Pseudomonas</i> , neutropenic fever	2g q8h		2 g q12h	2 g q24h	2 g q24h ⁴	2 g q12h			
Caspofungin (\$44)	24H		70 mg x 1 dose, then 24 hours after start 50 mg q24h								May need dose adjustment for hepatic impairment
Cefazolin (\$2)	U	Usual dose	1 g q8h		1 g q12h	1 g q24h	1 g q24h ⁴	1 – 2 g q12h		Alternative dosing for HD: Cefazolin 2 g post HD for 48 hour interdialytic interval, 3 g post HD for 72 hour interdialytic interval (example: 2 g post HD Mon and Wed, 3 g post HD Friday) Obese (>120 kg) with MSSA bacteremia consider Cefazolin 2 g q6h	
		MSSA bacteremia, endocarditis, osteomyelitis	2 g q8h		1-2 g q12h	1 g q24h	1 g q24h ⁴	2 g q12h			
Cefepime (\$17)	R	Cystitis	1 g q12h (CrCl >60)	1 g q24h (CrCl 30-60)	500 mg – 1 g q24h	500 mg – 1g q24h	500 mg – 1g q24h ⁴	1 g q12h		Pre-approved for neutropenic patients (2g Q8H) 1 st dose in sepsis – Use STOP Sepsis order set Alternative dosing for HD: Cefepime 2 g three times weekly post HD	
		Usual Dose	1 g q8h (CrCl >60)	1 g q12h (CrCl 30-60)	1 g q24h	1 g q24h	1g q24h ⁴	2 g q12h			
		CNS, concern for <i>pseudomonas</i> , febrile neutropenia	2 g q8h (CrCl>60)	2 g q12h (CrCl 30-60)	2 g q24h	1 g q24h	1g q24h ⁴	2 g q12h			
Cefpodoxime PO (\$11)	U		200 mg q12h		200 mg q24h		200 mg 3x weekly after HD	No data			
Ceftaroline (\$482)	24H	SSTI, CAP	600 mg q12h	400 mg q12h	300 mg q12h (CrCl 15-29)	200 mg q12h (CrCl <15)	200 mg q12h	400 mg q12h			
		MRSA (bacteremia, endocarditis, osteomyelitis)	600 mg q8h	400 mg q8h	300 mg q8h (CrCl 15-29)	400 mg q12h (CrCl <15)	400 mg q12h	400 mg q8h			
Ceftazidime (\$72)	R	<i>Pseudomonas</i> , <i>Stenotrophomonas</i> , <i>Burkholderia</i>	2 g q8h	1 g q8h	1 g q12h	500 mg -1 g q24h	1 g q24h ⁴	1-2 g q12h		Alternative dosing for HD: Ceftazidime 2 g three times weekly post HD	
Ceftazidime/avibactam (\$912) (Avycaz [®])	NF	Carbapenemase-producing Enterobacteriaceae, susceptibility variable	2.5 g q8h	1.25 g q8h	1.25 g q12h	1.25 g q24h	1.25 g q24h ⁴	1.25 g q8h		Provides broad Gram-negative coverage against carbapenem-resistant Enterobacteriaceae. It generally does not have additional activity for ceftazidime-resistant <i>Pseudomonas aeruginosa</i> or <i>Acinetobacter baumannii</i> . Request susceptibility upon or prior to initiation. Anaerobic activity is limited, consider addition of metronidazole.	

Antimicrobials (\$/Day) ¹	R/U/24H/NF ²	Specific Indications	Greater than 50	30-50	10-29	Less than 10	HD ³	CRRT (CVVH) ⁴	Dosing weight ^{5,6,7}		
Ceftriaxone (\$4)	U	CAP, UTI, intra-abdominal infections	1 - 2 g q24h								Pre-approved for adult meningitis (2 g q12h) Doses > 2g q24h for other indications requires ID approval
		Osteomyelitis, endocarditis, SBP, Lyme disease	2 g q24h								
		Meningitis, enterococcal endocarditis synergy	2 g q12h								
Ceftolozane/tazobactam (\$633) (Zerbaxa [®])	NF	MDR <i>Pseudomonas</i> - susceptibility variable	3 g q8h	1.5 q8h	750 mg q8h (CrCl 15-29)	Load with 1.5g then 8 hours later start 375 mg q8h (CrCl <15)	Load with 2.25 g, then 8 hours later start 450 mg q8h ⁴	1.5 q8h		Does not provide coverage against carbapenem-resistant Enterobacteriaceae Does not provide reliable coverage against <i>Staphylococcus</i> spp. Request susceptibility upon or prior to initiation. Anaerobic activity is limited, consider addition of metronidazole. Dosing for CrCl <15 mL/min is extrapolated	
Cefuroxime IV (\$6)	U		750 mg – 1.5 g q8h		750 mg-1.5g q12h	750 mg-1.5g q24h	750 mg q24h ⁴	1 g q12h		Doses > 750mg Q8H require ID approval Neurosurgical procedures may use 1.5 g Q6H	
Cefuroxime axetil PO (\$5)	U		250-500 mg BID		250-500 mg q24h	250-500mg q48h	500 mg q24h ⁴	No data			
Cephalexin (\$0.48)	U		500 mg q6h		250 mg q8h-500 mg q12h	250 mg q12	250 mg q12h-500 mg q24h ⁴	No data			
Ciprofloxacin IV (\$6)	U	Usual dose	400 mg q12h		400 mg q24h ⁴		400 mg q12h		400 mg q12h		
		<i>Pseudomonas</i>	400 mg q8h		400 mg q12h		400 mg q8h		400 mg q8h		
Ciprofloxacin PO (\$0.20)	U	Cystitis	250 mg q12h		250 mg q24h ⁴		250 mg q12h		250 mg q12h	Mg, Ca, Al – containing antacids, Fe, Zn, sucralfate →separate administration by ≥ 2h	
		Usual dose	500 mg q12h		500 mg q24h ⁴		500 mg q12h		500 mg q12h		
		<i>Pseudomonas</i>	750 mg q12h		750 mg q24h ⁴		500 mg q12h		500 mg q12h		
Clindamycin IV (\$9)	U		600 – 900 mg q8h							900 mg for necrotizing soft tissue infections and for obese patients >120 kg	
Clindamycin PO (\$1)	U		300 – 450 mg q6h								
Colistin (\$18)	24H		See separate colistin dosing recommendations								Preferred polymyxin for treatment of UTI
Daptomycin (\$177)	24H	<u>MRSA, MSSA</u> Bacteremia Endocarditis Osteomyelitis (8 – 10 mg/kg)	8 mg/kg q24h		8 mg/kg q48h		8 mg/kg post HD x 2 sessions; then, 12 mg/kg post HD for 3 rd session	8 mg/kg q48h		Non-obese: TBW ⁷ Obese ⁸ : AdjBW ⁷	Contraindicated for pneumonia; Monitor baseline and weekly CPK levels For <i>Enterococcus</i> spp: MIC ≤ 1 mcg/mL: 6-8 mg/kg MIC = 2 mcg/mL: 10-12 mg/kg MIC > 2: Consider at least 12 mg/kg, an alternate agent or combination therapy as MIC testing may be variable
		<u>Enterococcus/VRE</u> Bacteremia Osteomyelitis	8 – 12 mg/kg q24h (See MIC comment)		8 – 12 mg/kg q48h (See MIC comment)		8 mg/kg post HD x 2 sessions; then, 12 mg/kg post HD for 3 rd session	8 mg/kg q48h			
		Enterococcus/VRE Endocarditis	10 – 12 mg/kg q24h (See MIC comment)		10 – 12 mg/kg q48h (See MIC comment)		10 mg/kg post HD x 2 sessions; then, 12 mg/kg post HD for 3 rd session	10 mg/kg q48h			
		SSTI	4 mg/kg q24h		4 mg/kg q48h		4 mg/kg post HD x 2 sessions; then, 6 mg/kg post HD for 3 rd session	4 mg/kg q48h			
		Enterococcus UTI	6 mg/kg q24h (See MIC comment)		6 mg/kg q48h (See MIC comment)		6 mg/kg post HD x 2 sessions; then, 9 mg/kg post HD for 3 rd session	6 mg/kg q48h			
Ertapenem (\$107)	R		1g q24h		0.5 g q24h		1 g q24h				
Fluconazole IV/PO (\$4/ \$0.40)	IV: R PO: U	Invasive candidiasis/candidemia	Loading dose x 1 then 24 hours later start 400 – 800 mg q24h	Loading dose x 1 then 24 hours later start 200 – 400 mg q24h		Loading dose x 1 then 24 hours later start 100 – 200 mg q24h ⁴		Loading dose x 1 then 24 hours later start 200 – 400 mg q24h		Pre-approved for Kidney-Pancreas, Small Intestine, and Liver Transplant patients (while in SICU or up to 7 days), BMT patients, HIV patients, and surgical prophylaxis for VAD placement (48 hours up to 400mg Q24H) Loading dose (~12mg/kg or 800mg) for severe infections For <i>Candida glabrata</i>: MIC ≤ 4 mcg/mL 800 mg IV/PO x 1 dose then 400 mg q24h MIC = 8 mcg/mL 800 mg IV/PO q24h MIC > 8 consider an alternate antifungal	
		Oral candidiasis	100– 200 mg q24h		50 – 100 mg q24h		50 mg q24h ⁴		100 – 200 mg q24h		
		Esophageal candidiasis	200 – 400 mg q24h		100 – 200 mg q24h		50 – 100 mg q24h ⁴		200 – 400 mg q24h		
		Prophylaxis	200 – 400 mg q24h		100 – 200 mg q24h		50 – 100 mg q24h ⁴		200 – 400 mg q24h		
Foscarnet (\$824)	24H		See separate foscarnet dosing recommendations								

Antimicrobials (\$/Day) ¹	R/U/24H/NF ²	Specific Indications	Greater than 50	30-50	10-29	Less than 10	HD ³	CRRT (CVVH) ⁴	Dosing weight ^{5,6,7}		
Fosfomycin	R	Uncomplicated cystitis	3g PO x1								Not for systemic infections, including pyelonephritis
		Complicated cystitis (i.e. male)	3g PO q48h x 3 doses	3 g PO q72h x 2 doses (20 – 50 mL/min)		Not recommended due to low urine concentration		Not recommended due to limited data		Complicated – male, indwelling catheter, immunosuppression, GU instrumentation	
Ganciclovir IV (\$39)	R	CMV Induction/Treatment	CrCl ≥ 70 5 mg/kg q12h	CrCl 50-69 2.5 mg/kg q12h	CrCl 25-49 2.5 mg/kg q24h	CrCl 10-24 1.25 mg/kg q24h	CrCl <10, HD 1.25 mg/kg 3 times/week	CRRT 2.5 mg/kg q24h	Non-obese: TBW ⁷	Pre-approved for solid organ transplant patients according to protocol	
		CMV Maintenance/ Prophylaxis	5 mg/kg q24h	2.5 mg/kg q24h	1.25 mg/kg q24h	0.625 mg/kg q24h	0.625 mg/kg 3 times/week	1.25 mg/kg q24h	Obese ⁶ : AdjBW ⁷		
Imipenem-cilastatin (\$40)	R		500 mg q6h	500 mg q8h	500 mg q12h	250 mg q12h	500 mg q12h	500 mg q8h		MSSH approved dosing regimen	
Isavuconazole IV/PO (\$249/\$146)	24H		372 mg q8h x 6 doses, then 12 hours later start 372 mg q24h								
Levofloxacin IV/PO (\$5/\$0.32)	IV: R PO: U		500 – 750 mg q24h	500 - 750 mg q48h (CrCl 20 – 49)	750 mg x1, then 48 hours later start 500 mg q48h (CrCl < 20)	750 mg x1, then 48 hours later start 250 - 500 mg q48h ¹		750 mg x1, then 24 hours later start 250 mg q24h		IV: Pre-approved for Adult ED, prophylaxis in BMT patients (if not tolerating PO), SBP protocol if severe beta-lactam allergy, surgical prophylaxis for VAD placement for 48 hours (up to 500 mg q24h) PO: Mg, Ca, Al – containing antacids, Fe, Zn, sucralfate → separate administration ≥ 2 h	
Linezolid IV/PO (\$54/\$8)	24H		600 mg q12h								Only first dose pre-approved for BMT patients with history of VRE
Meropenem (\$18)	R	Usual dose	1 g q8h	1 g q12h	500 mg q12h	500 mg q24h ¹		1 g q12h		1 st dose in sepsis – Use STOP Sepsis order set	
		Febrile neutropenia	2g q8h	2g q12h	1 g q12h	1 g q24h ¹		1g q12h			
		Meningitis	2g q8h	2g q12h	1 g q12h	1 g q24h ¹		1g q12h			
Metronidazole IV/PO (\$5/\$1)	U		500 mg q8h								Doses > 500mg Q8H require ID approval 1 st dose in sepsis – Use STOP Sepsis order set
Nafcillin (\$68)	U		2 g q4h								
Nitrofurantoin (Macrobid [®]) (\$5)	U		100 mg PO q12h (CrCl ≥ 30)			Not recommended					Not for systemic infections, including pyelonephritis
Oseltamivir (Tamiflu) (\$5)	U	Influenza A and B Treatment	CrCl ≥ 60 75 mg q12h x 5 days	CrCl 30-60 30 mg q12h x 5 days	CrCl 10-30 30 mg q24h x 5 days	CrCl <10 30 mg every other day x 5 days	HD 30 mg x 1 dose, then 30 mg after every hemodialysis cycle for a total of 5 days	PD 30 mg x 1 dose	CRRT 75 mg q12h x 5 days	HD dosing example: Patient receives HD on MWF. Patient starts therapy on Tuesday. Give 30 mg on Tuesday, Wednesday and Friday.	
		Influenza A and B Prophylaxis	75 mg q24h x 7 days	30 mg q24h x 7 days	30 mg every other day x 7 days	No Data	30 mg x 1 dose, then 30 mg after every other hemodialysis cycle for a total of 7 days	30 mg x 1 dose	75 mg q24h x 7 days	HD dosing example: Patient received HD on MWF. Patient starts therapy on Tuesday. Give 30 mg on Tuesday, Wednesday and Monday.	
Penicillin G potassium/sodium IV (\$57)	U		2-4 mill unit q4h	75% q4h	20-50% q4h	25-50% q4-6h	75% q4h			Sodium formulation reserved for renal failure Dosing highly dependent on indication	
Piperacillin/tazobactam (\$30)	R	Usual dose	3.375 g q6h (CrCl>40)	2.25 g q6h (CrCl 20-40)	2.25 g q8h (CrCl<20)		2.25 g q8h	3.375 g q6h		Pre-approved for surgical oncology hepatobiliary procedures up to 48 hours, organ donation protocol	
		Severe nosocomial infection, <i>Pseudomonas</i> , Weight >120kg	4.5 g q6h (CrCl>40)	3.375 g q6h (CrCl 20-40)	2.25 g q6h (CrCl<20)		2.25 g q8h	3.375 g q6h			
Polymyxin B (\$131)	24H		20,000 Units/kg x 1 dose, then 12 hours later start 12,500 Units/kg q12h							Non-obese: TBW ⁷ Obese ⁶ : AdjBW	Preferred polymyxin for treatment of systemic infections other than UTI
Posaconazole PO suspension (\$176)	24H		Prophylaxis: 200 mg q8h Treatment: 200 mg q6h or 400 mg q12h								Pre-approved for prophylaxis in BMT and AML patients Formulations not interchangeable, many drug interactions
Posaconazole PO tablets (\$182)	24H		Prophylaxis & Treatment: 300 mg q12h x 2 doses, then 12 hours later start 300 mg q24h								Suspension: Only use suspension if cannot tolerate tablets; requires high fat meal and acidic environment for absorption
Sulfamethoxazole/Trimethoprim IV/PO (\$56/\$0.32)	U	UTI	1 DS tab q12h		1 SS tab q12h		1 SS tab q24h ¹	No Data		Dosing based on trimethoprim (TMP) component Dosing highly dependent on indication Listeria meningitis with beta-lactam allergy: 5 mg/kg IV q6-8h Single strength (SS): 80 mg TMP Double strength (DS): 160 mg TMP	
		SSTI, MRSA suspected	5 mg/kg q12h OR 1-2 DS tabs q12h		2.5 mg/kg q12h		2 - 2.5 mg/kg q12 - 24h ¹		2.5 mg/kg q12h		
		PCP treatment, invasive <i>Nocardia</i> , <i>Stenotrophomonas</i>	5 mg/kg q6-8h		5 mg/kg q12h		5 mg/kg q12 - 24h ¹		5 mg/kg q12h		
		PCP + Toxo Prophylaxis	160 mg IV q24h or 1 DS po q24h		80 mg IV q24h ¹ or 1 SS PO q24h ¹		80 mg IV q24h or 1 SS PO q24h		80 mg IV q24h or 1 SS PO q24h		
		PCP Prophylaxis	80 mg IV q24h or 1 SS po q24h or 1 DS TIW		80 mg IV q24h ¹ or 1 SS po q24h ¹ or 1 DS TIW ¹		80 mg IV q24h or 1 SS PO q24h		80 mg IV q24h or 1 SS PO q24h		
Tigecycline (\$144)	24H		100 mg x 1 dose, then 12 hours later start 50 mg q12h								May need dose adjustment for hepatic impairment
Valacyclovir (\$11)	U	Herpes zoster (shingles) treatment	1g q8h	1g q12h	1g q24h	500 mg q24h		No data			

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Antimicrobials (\$/Day) ¹	R/U/24H/NF ²	Specific Indications	Creatinine Clearance (mL/min) ³						CRRT (CVVH) ⁴	Dosing weight ^{5,6,7}
			Greater than 50	30-50	10-29	Less than 10	HD ⁸			
Tigecycline (\$144)	24H		100 mg x 1 dose, then 12 hours later start 50 mg q12h							May need dose adjustment for hepatic impairment
Valacyclovir (\$11)	U	Herpes zoster (shingles) treatment	1g q8h	1g q12h	1g q24h	500 mg q24h		No data		
Valganciclovir (\$51)	U	CMV Induction/Treatment	CrCl ≥ 60	CrCl 40-59	CrCl 25-39	CrCl 10-24	CrCl <10, HD	CRRT	Prophylaxis dosing may vary depending on CMV risk category	
			900 mg q12h	450 mg q12h	450 mg q24h	450 mg q48h	200 mg three times per week or 450 mg q48h ⁴	No data		
Vancomycin PO (\$6)	Y	Non severe – Severe <i>C. difficile</i>	125 mg q6h							Pre-approved for <i>C. difficile</i> positive patients – vancomycin 125 mg PO q6h x 10 days Refer to MSHS <i>C. difficile</i> guidelines for full details
		Fulminant <i>C. difficile</i>	500 mg q6h (plus metronidazole 500 mg IV q8h)							
Vancomycin IV (\$11)	U		15 mg/kg q8-12h	15 mg/kg q12-24h	15mg/kg q24-48h	Dose by level	Dose by level	1 g q24h	1 st dose in sepsis – Use STOP Sepsis order set	
Voriconazole PO (\$21)	24H	Aspergillosis Prophylaxis/Treatment	3 – 4 mg/kg q12h						Non-obese: TBW ⁷ Obese ⁶ : AdjBW	Pre-approved for prophylaxis in BMT patients – IV only when not tolerating PO Round PO to nearest 50 mg Consider therapeutic drug monitoring if for treatment after 5-7 days of therapy Many drug interactions; may need dose adjustment for hepatic impairment
Voriconazole IV (\$70)		Aspergillosis Treatment	6 mg/kg q12h x 2 doses, then 12 hours later start 4 mg/kg q12h							

¹Hospital costs/day based on 70 kg patient

²R=Restricted (9am-5pm); U=Unrestricted; 24H=ID approval at all times; NF = Non formulary

³ If total body weight is >30% over ideal body weight (IBW), then use adjusted body weight (AdjBW) to calculate renal function

⁴For HD dosing, use recommended interval and on dialysis days, give dose after dialysis

⁵CRRT: Based on 2 L/hr dialysate flow rate

⁶Obese = Body Mass Index greater than 30

⁷TBW = total body weight

IBW = ideal body weight =

- Male: [(Height (in.) - 60 in.) x 2.3] + 50 kg
- Female: [(Height (in.) - 60 in.) x 2.3] + 45.5 kg

AdjBW = adjusted body weight = [(Total - IBW) x 0.4] + IBW

- Use if >30% over ideal body weight (IBW)

CAP: Community acquired pneumonia

GNR: Gram-negative rod

GPC: Gram-positive cocci

MSSA: Methicillin susceptible *S. aureus*

MRSA: Methicillin resistant *S. aureus*

PCP: *Pneumocystis jirovecii* pneumonia

SBP: Spontaneous bacterial peritonitis

SSTI: Skin and soft tissue infection

UTI: Urinary tract infection

VRE: Vancomycin resistant Enterococci

CRRT: Continuous Renal Replacement Therapy

HD: Hemodialysis