VUAH Antimicrobial Dosing Guidance

This guidance document is meant to provide general dosing recommendations. There are situations where a different dose may be used. Please consult pharmacy for assistance if needed. This document is meant to serve as a reference and does not substitute for clinical decision making.

**Indicates medication is included in pharmacist renal dose adjustment protocol*

Antibiotics

Indication	>50 ml/min	30-49 ml/min	10-29 ml/min	<10 ml/min; HD (give after HD)	CRRT[1]
Amikacin (IV)					
PK Consult					
***Amoxicillin (PO)**					
Mild (ex. UTI, SSTI)	500 mg q8h or 875 mg Q12h	500 mg q8h or 875 mg Q12h	500 mg Q12h	500 mg Q24h	500 mg Q8h
Moderate to Severe (ex. pneumonia, bacteremia, osteo)	1 g Q8h	1 g Q8h	1 g Q12h	500 mg Q12h	1 g Q8h
Infective Endocarditis	1 g Q6h	1 g Q6h	1 g Q8h	1 g Q12h	1 g Q6h
***Amoxicillin/Clavulanate (PO)**					
	875/125 mg Q12h	875/125 mg Q12h	500mg/125 mg Q12h	500mg/125 mg Q24h	875/125 mg Q12h
***Ampicillin (IV)**					
Mild to Moderate (ex. UTI, SSTI)	2 g Q6h	2 g Q8h	2 g Q12h	2 g Q12h	2 g Q8h
Severe (ex. bacteremia, meningitis, endocarditis, osteo)	2 g Q4h	2 g Q6h	2 g Q8h	2 g Q8-12h	2 g Q6h
***Ampicillin/Sulbactam (IV)**					
Non-*Acinetobacter*	3 g Q6h	3 g Q6h	3 g Q12h	3 g Q24h	3 g Q8h
Acinetobacter Mild Infection	3 g Q4h	3 g Q6h	3 g Q8h	3 g Q12h	3 g Q6h
Acinetobacter Moderate to Severe Infection	9 g Q8h (Infuse over 4 hours)	9 g Q8h (Infuse over 4 hours)	9 g Q12h (Infuse over 4 hours)	9 g Q24h (Infuse over 4 hours)	9 g Q12h (Infuse over 4 hours)
Azithromycin (PO/IV)					
Pneumonia	500 mg x 1, followed by 250 mg Q24h OR 500 mg Q24h				

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Indication	>50 ml/min	30-49 ml/min	10-29 ml/min	<10 ml/min; HD (give after HD)	CRRT[1]
***Aztreonam (IV)**					
Mild to Moderate	1-2 g Q8h	1-2 g Q8h	1-2 g Q12h	1-2 g Q24h	1-2 g Q8h
Severe (ex. neutropenia, meningitis)	2 g Q6-8h	2 g Q6-8h	2 g Q12h	2 g Q24h	2 g Q6-8h
***Cefazolin (IV)**					
Mild (cystitis)	1 g Q8h	1 g Q8h	1 g Q12h	500 mg Q24h	1 g Q8h
Moderate to Severe (ex. systemic infection, SSTI)	2 g Q8h	2 g Q8h	2 g Q12h	1 g Q24h Outpatient: 2g 3x/week post-HD; consider 3g for 72h interdialytic period	2 g Q8h
Cefdinir (PO)					
	300 mg Q12h	300 mg Q12h	300 mg Q24h	300 mg x 1, then 300 mg postdialysis on dialysis days	300 mg Q12h
***Cefepime (IV)**					
	2 g Q8h	2 g Q12h	1 g Q12h	1 g Q24h Outpatient: 2g 3x/week post-HD	2 g Q12h[2]

Cefiderocol (IV)						
	>120 ml/min	60-120 ml/min	30-60 ml/min	15-30 ml/min	<15 ml/min; HD (give after HD)	CRRT
	2 g Q6h	2 g Q8h	1.5 g Q8h	1 g Q8h	750 mg Q12h	See below[3]

Ceftaroline (IV)					
Mild to Moderate	600 mg Q12h	400 mg Q12h	300 mg Q12h	200 mg Q12h	400 mg Q12h
Severe (ex. Bacteremia)	600 mg Q8h	400 mg Q8h	300 mg Q8h	200 mg Q8h	400 mg Q8h
***Ceftazidime (IV)**					
	2 g Q8h	2 g Q12h	2 g Q24h	1 g Q24h Outpatient: 2g 3x/week post-HD	2 g Q12h
Ceftazidime-Avibactam (IV)					
	2.5 g Q8h	1.25 g Q8h	0.94 g Q12h	0.94 g Q24h	1.25-2.5 g Q8h

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Indication	>50 ml/min	30-49 ml/min	10-29 ml/min	<10 ml/min; HD (give after HD)	CRRT[1]
Ceftolozane-Tazobactam (IV)					
	3 g Q8h	1.5 g Q8h	750 mg Q8h	2.25 g x 1, then 450 mg Q8h	1.5 g Q8h
Ceftriaxone (IV)					
Cystitis	1 g Q24h				
Systemic Infection	2 g Q24h				
CNS Infections or *E. faecalis* Endocarditis	2 g Q12h				
***Cefuroxime (PO)**					
	250 – 500 mg Q12h	250 – 500 mg Q12h	250 mg Q12h	250 mg Q24h	250 – 500 mg Q12-24h
***Cephalexin (PO)**					
Mild to Moderate (ex. UTI, SSTI)	500 mg Q6h	500 mg Q6h	500 mg Q8h-12h	500 mg Q12h-24h	500 mg Q6h
Severe (ex. Osteomyelitis)	1000 mg Q6h	1000 mg Q6h	1000 mg Q12h	1000 mg Q24h	1000 mg Q6h
***Ciprofloxacin (PO/IV)**					
Non-*Pseudomonas* (PO)	500 mg Q12h	500 mg Q12h	500 mg Q24h	500 mg Q24h	500 mg Q12h
Pseudomonas (PO)	750 mg Q12h	750 mg Q12h	750 mg Q24h	500 mg Q24h	750 mg Q12h
Non-*Pseudomonas* (IV)	400 mg Q12h	400 mg Q12h	400 mg Q24h	400 mg Q24h	400 mg Q12h
Pseudomonas (IV)	400 mg Q8h	400 mg Q8h	400 mg Q12h	400 mg Q24h	400 mg Q8h
Clarithromycin (PO)					
	500 mg Q12h	500 mg Q12h	500 mg Q24h	500 mg Q24h	500 mg Q24h
Clindamycin (PO/IV)					
IV	600-900 mg Q8h				
PO	300-450 mg Q6-8h				
Dalbavancin (IV)					
<2 Weeks Remaining	1500 mg x 1	1500 mg x 1	1500 mg x 1	1500 mg x 1	Do not use
≥2 Weeks Remaining	1500 mg on days 1 and 8	1500 mg on days 1 and 8	1500 mg on day 1, then 750 mg on day 8	1500 mg on days 1 and 8	Do not use
***Daptomycin (IV)**					
	6 – 12 mg/kg Q24h	6 – 12 mg/kg Q24h	6 – 12 mg/kg Q48h	6 – 12 mg/kg Q48h Outpatient: 3x/wk post-HD; consider 50% higher dose on 72hr interdialytic day (max 12 mg/kg)	6 – 12 mg/kg Q24h

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Indication	>50 ml/min	30-49 ml/min	10-29 ml/min	<10 ml/min; HD (give after HD)	CRRT[1]
Dicloxacillin (PO)					
250-500 mg Q6h					
Doxycycline (PO/IV)					
100 mg Q12h					
***Ertapenem (IV)**					
	1 g Q24h	1 g Q24h	500 mg Q24h	500 mg Q24h	1 g Q24h
Fidaxomicin (PO)					
Initial Infection	200 mg Q12h x 10 days For recurrent infection consider 200 mg Q12h x 5 days, then 200 mg every other day x 20 days				
Fosfomycin (PO)					
Cystitis	3g x 1				
Complicated UTI	3g Q48h				
Gentamicin (IV)					
PK Consult					
Imipenem-Cilastatin (IV)					
Nontuberculous Mycobacteria	1 g Q12h	500 mg Q12h	500 mg Q12h	250 mg Q12h	500 mg Q8h
Severe (ex. Bacteremia, Necrotizing SSTI)	500 mg Q6h or 1 g Q8h	500 mg Q8h	500 mg Q12h	250 mg Q12h	500 mg Q8h
***Levofloxacin (PO/IV)**					
Systemic Infection	750 mg Q24h	750 mg Q48h	750 mg X1 then 500 mg Q48h	750 mg X1 then 500 mg Q48h	750 mg x 1 then 500 mg Q24h
Prophylaxis	500 mg Q24h	500 mg x1 then 250 mg Q24h	500 mg x1 then 250 mg Q48h	500 mg x1 then 250 mg Q48h	500 mg x1 then 250 mg Q24h
Linezolid (PO/IV)					
600 mg Q12h[4]					
***Meropenem (IV)**					
Systemic Infection	1 g Q8h	1 g Q12h	500 mg Q12h	500 mg Q24h	1 g Q8-12h
CNS	2 g Q8h	2 g Q12h	1 g Q12h	1 g Q24h	2 g Q12h

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Indication	>50 ml/min	30-49 ml/min	10-29 ml/min	<10 ml/min; HD (give after HD)	CRRT[1]
Metronidazole (PO/IV)					
Systemic Infection	500 mg Q12h				
Fulminant *C. difficile*	500 mg IV Q8h (in combination with oral and/or rectal vancomycin)				
Brain abscess	500 mg Q6-8h				
Minocycline (PO)					
Systemic Infection	100 mg Q12h				
Acinetobacter, S. maltophilia	200 mg Q12h				
Moxifloxacin (PO/IV)					
400 mg Q24h					
Nafcillin (IV)					
2 g Q4h or 12g over 24h as a continuous infusion					
Nitrofurantoin (PO)					
Macrobid (Cystitis)	100 mg Q12h	100 mg Q12h	Do not use	Do not use	Do not use
Macrodantin (Cystitis)	50-100 mg Q6h	50-100 mg Q6h	Do not use	Do not use	Do not use
***Penicillin G (IV)**					
	18-24 million units daily divided Q4h or as a continuous infusion	18 million units daily divided Q4h or as a continuous infusion	12 million units daily divided Q4h or as a continuous infusion	6-12 million units daily divided Q4h-6h	18-24 million units daily divided Q4h
***Piperacillin/Tazobactam (IV)**					
	≥20 ml/min		**<20 ml/min or HD**		**CRRT[1]**
Load	4.5 g x 1 over 3 minutes				
Maintenance	4.5 g Q8h over 4 hours		4.5 g Q12h over 4 hours		4.5 g Q8h over 4 hours
Cystic Fibrosis	4.5 g Q6h over 4 hours		4.5 g Q12h over 4 hours		4.5 g Q8h over 4 hours
Sulbactam/Durlobactam (IV)					
≥130 ml/min	**45-129 ml/min**	**30-44 ml/min**	**15-29 ml/min**	**<15 ml/min; HD (give after HD)**	**CRRT**
Sulbactam 1g/ Durlobactam 1g Q4h	Sulbactam 1g/ Durlobactam 1g Q6h	Sulbactam 1g/ Durlobactam 1g Q8h	Sulbactam 1g/ Durlobactam 1g Q12h	Load: Sulbactam 1g/ Durlobactam 1g Q12h x 3 doses Maintenance: Sulbactam 1g/Durlobactam 1g Q24h	Sulbactam 1g/ Durlobactam 1g Q6-8h[5]

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Indication	>50 ml/min	30-49 ml/min	10-29 ml/min	<10 ml/min; HD (give after HD)	CRRT[1]
Tedizolid (PO)					
200 mg Q24h					
Tigecycline (IV)					
Systemic Infection	100 mg x 1, then 50 mg Q12h				
CRE, *Acinetobacter*, *S. maltophilia*	200 mg x 1, then 100 mg Q12h				
Tobramycin (IV)					
PK Consult					
***Trimethoprim/Sulfamethoxazole (PO/IV)**					
Cystitis	1 DS tablet Q12h	1 DS tablet Q12h	1 SS tablet Q12h	1 SS tablet Q24h	1 DS tablet Q12h
Skin Soft Tissue	5-8 mg/kg/day TMP divided every 6-12 hours	5-8 mg/kg/day TMP divided every 6-12 hours	Reduce dose by 50%	Reduce dose by 75%	5-8 mg/kg/day TMP divided every 6-12 hours
Systemic Infection (ex. bacteremia, osteomyelitis)	8-12 mg/kg/day TMP divided every 6-12 hours	8-12 mg/kg/day TMP divided every 6-12 hours	Reduce dose by 50%	Reduce dose by 75%	8-12 mg/kg/day TMP divided every 6-12 hours
Meningitis/Nocardia/PJP	12-15 mg/kg/day TMP divided every 6-12 hours	12-15 mg/kg/day TMP divided every 6-12 hours	Reduce dose by 50%	Reduce dose by 75%	8-12 mg/kg/day TMP divided every 6-12 hours
Vancomycin (IV)					
PK Consult					

[1] Drug clearance is highly dependent on the CRRT flow rate. Dosing may be different for more aggressive flow rates.

[2] Consider 2g Q8h for CNS infections or severe gram-negative infections with elevated MIC values

[3] Effluent flow rate ≤2 L/hour: 1.5 g every 12 hour
Effluent flow rate 2.1 to 3 L/hour: 2 g every 12 hours
Effluent flow rate 3.1 to 4 L/hour: 1.5 g every 8 hours
Effluent flow rate ≥4.1 L/hour: 2 g every 8 hours

[4] Consider using higher doses with CRRT for severe infections with MIC ≥2 mg/L

[5] Limited data

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Antivirals

Indication	>50 ml/min	30-49 ml/min	10-29 ml/min	<10 ml/min; HD (give after HD)	CRRT[1]
***Acyclovir (IV)**					
Mucocutaneous (IV)	5 mg/kg Q8h	5 mg/kg Q12h	5 mg/kg Q24h	2.5 mg/kg Q24h	5 mg/kg Q12h
HSV encephalitis or VZV (IV)	10 mg/kg Q8h	10 mg/kg Q12h	10 mg/kg Q24h	5 mg/kg Q24h	10 mg/kg Q12h
Cidofovir (IV)					
Consult ID Pharmacy					
Foscarnet (IV)					
	>1.4 mL/min/kg	>1-1.4 mL/min/kg	>0.8-1 mL/min/kg	>0.6-0.8 mL/min/kg	>0.5-0.6 mL/min/kg	≥0.4-0.5 mL/min/kg	<0.4 mL/min/kg
CMV Induction	90 mg/kg Q12h	70 mg/kg Q12h	50 mg/kg Q12h	80 mg/kg Q24h	60 mg/kg Q24h	50 mg/kg Q24h	Not recommended
CMV Maintenance	90 mg/kg Q24h	70 mg/kg Q24h	50 mg/kg Q24h	80 mg/kg Q48h	60 mg/kg Q48h	50 mg/kg Q48h	Not recommended
Letermovir (PO/IV)					
480 mg Q24h (240 mg Q24h if on cyclosporine)					
Nirmatrelvir/ritonavir (PO)					
	>60 ml/min	**30-59 ml/min**	**10-29 ml/min**	**<10 ml/min; HD (give after HD)**	**CRRT[1]**
	300 mg nirmatrelvir + 100 mg ritonavir Q12h	150 mg nirmatrelvir + 100 mg ritonavir Q12h	Not recommended	Not recommended	Not recommended
Indication	**>50 ml/min**	**30-49 ml/min**	**10-29 ml/min**	**<10 ml/min; HD (give after HD)**	**CRRT[1]**
***Oseltamivir (PO)**					
Treatment	75mg Q12h	75 mg x 1 then 30 mg q12h	30 mg Q24h	30 mg x 1 then 30 mg post-HD	75 mg Q12h
Prophylaxis	75 mg Q24h	30 mg Q24h	30 mg Q48h	30 mg x 1 then 30 mg post-HD	75 mg Q24h
Remdesivir (IV)					
200 mg x 1, then 100 mg Q24h					
***Valacyclovir (PO)**					
Orolabial (HSV)	1000 mg Q12h	1000 mg Q12h	500 mg Q12h	500 mg Q24h	500 mg Q12h
Genital (HSV)	1000 mg Q12h	1000 mg Q12h	1000 mg Q24h	500 mg Q24h	1000 mg Q24h
VZV Treatment	1000 mg Q8h	1000 mg Q12h	1000 mg Q24h	500 mg Q24h	1000 mg Q24h

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Prophylaxis (HSV/VZV)	500 mg Q12h	500 mg Q12h	500 mg Q24h	500mg Q24h	500 mg Q24h	
***Ganciclovir (IV)**						
	>70 ml/min	**50-69 ml/min**	**25-49 ml/min**	**10-24 ml/min**	**<10 ml/min or HD**	**CRRT[1]**
CMV Induction	5 mg/kg Q12h	2.5 mg/kg Q12h	2.5 mg/kg Q24h	1.25 mg/kg Q24h	1.25 mg/kg 3x/week	2.5 mg/kg Q12h
CMV Maintenance	5 mg/kg Q24h	2.5 mg/kg Q24h	1.25 mg/kg Q24h	0.625 mg/kg Q24h	0.625 mg/kg 3x/week	2.5 mg/kg Q24h
***Valganciclovir (PO)**						
	≥60 ml/min	**40-59 ml/min**	**25-39 ml/min**	**10-24 ml/min**	**<10 ml/min or HD**	**CRRT[1]**
CMV Induction	900 mg Q12h	450 mg Q12h	450 mg Q24h	450 mg Q48h	450 mg post-HD 3x/week	450 mg Q12h
CMV Maintenance/ Prophylaxis	900 mg Q24h	450 mg Q24h	450 mg Q48h	450 mg twice weekly	450 mg post-HD 3x/week	450 mg Q24h

Antifungals

Indication	**>50 ml/min**	**30-49 ml/min**	**10-29 ml/min**	**<10 ml/min; HD (give after HD)**	**CRRT[1]**
Amphotericin B Deoxycholate (IV)					
UTI	0.3-0.6 mg/kg Q24h				
Liposomal Amphotericin B (IV)					
Systemic Infection	3-5 mg/kg Q24h				
Mucormycosis	5-10 mg/kg Q24h				
***Fluconazole (PO/IV)**					
Cutaneous/ Oropharyngeal	100 – 200 mg Q24h	Load with full dose, then reduce further doses by 50 %	Load with full dose then reduce further doses by 50 %	Load with full dose then reduce further doses by 50 %	200 – 400 mg Q24h
Systemic Infection	400 – 1200 mg Q24h	Load with full dose then reduce further doses by 50 %	Load with full dose then reduce further doses by 50 %	Load with full dose then reduce further doses by 50 %	800 mg Q24h

***Flucytosine (PO)**				
>40 ml/min	**20-39 ml/min**	**10-19 ml/min**	**<10 ml/min or HD**	**CRRT[1]**
25 mg/kg Q6h	25 mg/kg Q12h	25 mg/kg Q24h	25 mg/kg Q48h	25 mg/kg Q12h
Isavuconazole (PO/IV)				

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Capsule, IV	372 mg Q8h x 6 doses, then 372 mg Q24h starting 12 to 24 hours after the last loading dose
Itraconazole (PO) Dose adjusted based on troughs; first trough should be drawn 10-14 days after starting therapy	
PO Capsule and PO Solution	200 mg Q8h x 9 doses, then 200 mg Q12h
Micafungin (IV)	
Invasive Candidiasis Treatment	100 mg Q24h
Esophageal Candidiasis, Infective Endocarditis	150 mg Q24h
Posaconazole (PO/IV) Dose adjusted based on troughs; first trough should be drawn 7 days after starting therapy	
PO Tablet, IV	300 mg Q12h x 2 doses, then 300 mg Q24h
PO Suspension Prophylaxis	200 mg Q8h
PO Suspension Systemic Infection	200 mg Q6h or 400 mg Q12h
Voriconazole (PO/IV) Dose adjusted based on troughs; first trough should be drawn 5-7 days after starting therapy	
PO Tablet, PO Suspension	200-300 mg Q12h
IV	6 mg/kg Q12h x 2 doses, then 4 mg/kg Q12h

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