



**ANTIMICROBIAL DOSING RECOMMENDATIONS FOR PEDIATRIC PATIENTS
(≥2 MONTHS OF AGE AND POST-MENSTRUAL AGE >44 WEEKS')**

These guidelines include the most common indications for antimicrobial use at Michigan Medicine. Dosing recommendations are based on estimated GFR using the modified Schwartz equation¹, which has not been validated in children <1 year of age. Contact your team's pharmacist (or the pharmacy at 764-8208) to discuss appropriate dosage adjustments in children <1 year of age with impaired renal function. Please use Lexicomp® for dosing in other indications. Refer to the [Antimicrobial Stewardship Team website](#) for additional [treatment guidelines of infections in pediatric patients](#).

Antibiotics			
Amikacin IV	Cefoxitin IV	Ciprofloxacin IV	Metronidazole IV
Amoxicillin PO	Cefpodoxime PO	Clindamycin IV/PO	Nafcillin IV
Amoxicillin-clavulanate PO	Ceftaroline IV	Daptomycin IV	Nitrofurantoin PO
Ampicillin IV	Ceftazidime IV	Doxycycline IV/PO	Penicillin G IV
Ampicillin-sulbactam IV	Ceftazidime-avibactam IV	Ertapenem IV	Piperacillin-tazobactam IV
Azithromycin IV/PO	Ceftriaxone IV	Gentamicin IV	Rifampin IV/PO
Aztreonam IV	Cefuroxime Axetil PO	Imipenem IV	TMP-SMX IV/PO
Cefazolin IV	Cefuroxime IV	Levofloxacin IV/PO	Tobramycin IV
Cefepime IV	Cephalexin PO	Linezolid IV/PO	Vancomycin IV
Cefixime PO	Ciprofloxacin PO	Meropenem IV	
Antifungals			
Amphotericin B, liposomal IV	Itraconazole PO	Pentamidine IV	Voriconazole IV/PO
Fluconazole IV/PO	Micafungin IV	Posaconazole IV/PO	
Antivirals			
Acyclovir IV	Foscarnet IV	Oseltamivir PO	Valganciclovir PO
Cidofovir IV	Ganciclovir IV	Peramivir IV	Zanamivir INH
Notes			
Footnotes		References	

	CrCl ¹ >50 mL/min	CrCl ¹ 50-30 mL/min	CrCl ¹ 29-10 mL/min	CrCl ¹ <10 mL/min	Peritoneal Dialysis	Hemodialysis ²	CRRT ³ Based on eGFR >50 mL/min
ACYCLOVIR IV							
Mucocutaneous HSV infection (mild AND immunocompetent, all ages)	5 mg/kg/dose q8h	5 mg/kg/dose q12h	5 mg/kg/dose q24h	2.5 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q8h
Mucocutaneous HSV infection (moderate to severe OR immunocompromised, all ages)	10 mg/kg/dose q8h	10 mg/kg/dose q12h	10 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q24h	10 mg/kg/dose q8h
0 to 3 months old	20 mg/kg/dose q8h	20 mg/kg/dose q12h	20 mg/kg/dose q24h	10 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q24h	20 mg/kg/dose q8h
Disseminated HSV or HSV encephalitis (3 months to <12 years)	15 mg/kg/dose q8h	15 mg/kg/dose q12h	15 mg/kg/dose q24h	7.5 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q24h	15 mg/kg/dose q8h
Disseminated HSV or HSV encephalitis (≥12 years)	10 mg/kg/dose q8h	10 mg/kg/dose q12h	10 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q24h	10 mg/kg/dose q8h
Varicella infections (chickenpox, shingles)	10 mg/kg/dose q8h	10 mg/kg/dose q12h	10 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q24h	10 mg/kg/dose q8h
AMIKACIN⁴ IV							
See Empiric Dosing and Monitoring Recommendations for Aminoglycosides in Pediatric Patients							
AMOXICILLIN PO							
Otitis media/PCN-resistant <i>S. pneumoniae</i>	45 mg/kg/dose q12h (max: 2 g/dose)	45 mg/kg/dose q12h	20 mg/kg/dose q12h	20 mg/kg/dose q24h	20 mg/kg/dose q24h (max: 1 g/dose)	20 mg/kg/dose q24h (max: 1 g/dose)	No information
Community-acquired pneumonia	45 mg/kg/dose q12h (max: 2 g/dose)	45 mg/kg/dose q12h	20 mg/kg/dose q12h	20 mg/kg/dose q24h	20 mg/kg/dose q24h (max: 1 g/dose)		
Other infections	25 mg/kg/dose q12h (max: 2 g/dose)	25 mg/kg/dose q12h	20 mg/kg/dose q12h	20 mg/kg/dose q24h	20 mg/kg/dose q24h (max: 1 g/dose)		

	CrCl ¹ >50 mL/min	CrCl ¹ 50-30 mL/min	CrCl ¹ 29-10 mL/min	CrCl ¹ <10 mL/min	Peritoneal Dialysis	Hemodialysis ²	CRRT ³ Based on eGFR >50 mL/min
AMOXICILLIN-CLAVULANATE PO	Dosing based on amoxicillin component (Click here for formulations based on amoxicillin:clavulanate ratio)						
Otitis media, rhinosinusitis, outpatient pneumonia	45 mg/kg/dose q12h (max: 2 g/dose) (amox:clav ratio 14:1)	45 mg/kg/dose q12h (max: 2 g/dose) (amox:clav ratio 14:1)	20 mg/kg/dose q12h (max: 1 g/dose) (amox:clav ratio 7:1)	20 mg/kg/dose q24h (max: 500 mg/dose) (amox:clav ratio 4:1)	20 mg/kg/dose q24h (max: 500 mg/dose) (amox:clav ratio 4:1)	20 mg/kg/dose q24h (max: 500 mg/dose) (amox:clav ratio 4:1)	45 mg/kg/dose q12h (max: 2 g/dose) (amox:clav ratio 14:1)
Inpatient pneumonia	30 mg/kg/dose q8h (max: 1 g/dose) (amox:clav ratio 14:1)	30 mg/kg/dose q8h (max: 1 g/dose) (amox:clav ratio 14:1)	20 mg/kg/dose q12h (max: 1 g/dose) (amox:clav ratio 7:1)	20 mg/kg/dose q24h (max: 500 mg/dose) (amox:clav ratio 4:1)	20 mg/kg/dose q24h (max: 500 mg/dose) (amox:clav ratio 4:1)	20 mg/kg/dose q24h (max: 500 mg/dose) (amox:clav ratio 4:1)	30 mg/kg/dose q8h (max: 1 g/dose) (amox:clav ratio 14:1)
Bone and joint infections	33 mg/kg/dose q8h (max: 1 g/dose) (amox:clav ratio 14:1)	33 mg/kg/dose q8h (max: 1 g/dose) (amox:clav ratio 14:1)	20 mg/kg/dose q12h (max: 1 g/dose) (amox:clav ratio 7:1)	20 mg/kg/dose q24h (max: 500 mg/dose) (amox:clav ratio 4:1)	20 mg/kg/dose q24h (max: 500 mg/dose) (amox:clav ratio 4:1)	20 mg/kg/dose q24h (max: 500 mg/dose) (amox:clav ratio 4:1)	33 mg/kg/dose q8h (max: 1 g/dose) (amox:clav ratio 14:1)
Intra-abdominal infections	15 mg/kg/dose q8h (max: 500 mg/dose) (amox:clav ratio 4:1)	15 mg/kg/dose q8h (max: 500 mg/dose) (amox:clav ratio 4:1)	20 mg/kg/dose q12h (max: 500 mg/dose) (amox:clav ratio 4:1)	20 mg/kg/dose q24h (max: 500 mg/dose) (amox:clav ratio 4:1)	20 mg/kg/dose q24h (max: 500 mg/dose) (amox:clav ratio 4:1)	20 mg/kg/dose q24h (max: 500 mg/dose) (amox:clav ratio 4:1)	15 mg/kg/dose q8h (max: 500 mg/dose) (amox:clav ratio 4:1)
Urinary tract infections	25 mg/kg/dose q12h (max: 875 mg/dose) (amox:clav ratio 7:1)	25 mg/kg/dose q12h (max: 875 mg/dose) (amox:clav ratio 7:1)	20 mg/kg/dose q12h (max: 500 mg/dose) (amox:clav ratio 7:1)	20 mg/kg/dose q24h (max: 500 mg/dose) (amox:clav ratio 4:1)	20 mg/kg/dose q24h (max: 500 mg/dose) (amox:clav ratio 4:1)	20 mg/kg/dose q24h (max: 500 mg/dose) (amox:clav ratio 4:1)	25 mg/kg/dose q12h (max: 875 mg/dose) (amox:clav ratio 7:1)
AMPHOTERICIN B, LIPOSOMAL IV							
Invasive fungal infections	5 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q24h
AMPICILLIN IV							
Community-acquired pneumonia:							
<i>H influenzae</i> (beta-lactamase negative), Group A <i>Streptococcus</i>	50 mg/kg/dose q6h (max: 2 g/dose)	50 mg/kg/dose q6h	50 mg/kg/dose q8h	50 mg/kg/dose q12h	50 mg/kg/dose q12h	50 mg/kg/dose q12h	50 mg/kg/dose q6h
<i>S pneumoniae</i> (MIC ≤2 mcg/mL)	50 mg/kg/dose q6h (max: 2 g/dose)	50 mg/kg/dose q6h	50 mg/kg/dose q8h	50 mg/kg/dose q12h	50 mg/kg/dose q12h	50 mg/kg/dose q12h	50 mg/kg/dose q6h
<i>S pneumoniae</i> (MIC ≥4 mcg/mL)	100 mg/kg/dose q6h (max: 2 g/dose)	100 mg/kg/dose q6h	100 mg/kg/dose q8h	100 mg/kg/dose q12h	50 mg/kg/dose q12h	100 mg/kg/dose q12h	100 mg/kg/dose q6h
Urinary tract infections	50 mg/kg/dose q6h (max: 2 g/dose)	50 mg/kg/dose q8h	50 mg/kg/dose q8h	50 mg/kg/dose q12h	50 mg/kg/dose q12h	50 mg/kg/dose q12h	50 mg/kg/dose q6h
Endocarditis, meningitis	100 mg/kg/dose q6h (max: 3 g/dose)	100 mg/kg/dose q6h	100 mg/kg/dose q8h	100 mg/kg/dose q12h	50 mg/kg/dose q12h	100 mg/kg/dose q12h	100 mg/kg/dose q6h

	CrCl ¹ >50 mL/min	CrCl ¹ 50-30 mL/min	CrCl ¹ 29-10 mL/min	CrCl ¹ <10 mL/min	Peritoneal Dialysis	Hemodialysis ²	CRRT ³ Based on eGFR >50 mL/min
AMPICILLIN-SULBACTAM IV	Dosing based on ampicillin component – For maximum doses, 2 g ampicillin/dose = 3 g ampicillin-sulbactam/dose						
Aspiration pneumonia, Community-acquired pneumonia with <i>H influenzae</i> (beta-lactamase positive)	50 mg/kg/dose q6h (max: 2 g ampicillin/dose)	50 mg/kg/dose q6h	50 mg/kg/dose q8-12h	50 mg/kg/dose q12h	50 mg/kg/dose q12h	50 mg/kg/dose q12h	50 mg/kg/dose q6h
Endocarditis, meningitis	100 mg/kg/dose q6h (max: 3 g ampicillin/dose)	100 mg/kg/dose q6h	100 mg/kg/dose q8h	100 mg/kg/dose q12h	50 mg/kg/dose q12h	100 mg/kg/dose q12h	100 mg/kg/dose q6h
AZITHROMYCIN IV/PO							
Most indications	10 mg/kg/dose load (max: 500 mg/dose), then 5 mg/kg/dose q24h (max: 250 mg/dose)	10 mg/kg/dose load, then 5 mg/kg/dose q24h	10 mg/kg/dose load, then 5 mg/kg/dose q24h	10 mg/kg/dose load, then 5 mg/kg/dose q24h	10 mg/kg/dose load, then 5 mg/kg/dose q24h	10 mg/kg/dose load, then 5 mg/kg/dose q24h	10 mg/kg/dose load, then 5 mg/kg/dose q24h
AZTREONAM IV							
CNS Infections	50 mg/kg/dose q6h (max: 2 g/dose)	50 mg/kg/dose q6h (max: 2 g/dose)	33 mg/kg/dose q8h (max: 2 g/dose)	20 mg/kg/dose q12h (max: 2 g/dose)	20 mg/kg/dose q12h (max: 2 g/dose)	20 mg/kg/dose q12h (max: 2 g/dose)	50 mg/kg/dose q6h (max: 2 g/dose)
Other indications including sepsis, cystic fibrosis, and febrile neutropenia	50 mg/kg/dose q8h (max: 2 g/dose)	50 mg/kg/dose q8h (max: 2 g/dose)	20 mg/kg/dose q8h (max: 2 g/dose)	10 mg/kg/dose q12h (max: 1 g/dose)	10 mg/kg/dose q12h (max: 1 g/dose)	10 mg/kg/dose q12h (max: 1 g/dose)	50 mg/kg/dose q8h (max: 2 g/dose)
CEFAZOLIN IV							
Cystitis	17 mg/kg/dose q8h (max: 1 g/dose)	17 mg/kg/dose q8h	17 mg/kg/dose q12h	17 mg/kg/dose q24h	25 mg/kg/dose q24h	25 mg/kg/dose q24h	17 mg/kg/dose q8h
Endocarditis, systemic infections, skin and soft tissue infections	33 mg/kg/dose q8h (max: 2 g/dose)	33 mg/kg/dose q8h	33 mg/kg/dose q12h	33 mg/kg/dose q24h	25 mg/kg/dose q24h	25 mg/kg/dose q24h	33 mg/kg/dose q8h
Osteomyelitis, MSSA pneumonia	50 mg/kg/dose q8h (max: 2 g/dose)	50 mg/kg/dose q8h	50 mg/kg/dose q12h	50 mg/kg/dose q24h	25 mg/kg/dose q24h	25 mg/kg/dose q24h	50 mg/kg/dose q8h

	CrCl ¹ >50 mL/min	CrCl ¹ 50-30 mL/min	CrCl ¹ 29-10 mL/min	CrCl ¹ <10 mL/min	Peritoneal Dialysis	Hemodialysis ²	CRRT ³ Based on eGFR >50 mL/min
CEFEPIME IV	Extended infusion over 4 hours is preferred for most patients						
Routine pediatric dosing, including CNS infections	50 mg/kg/dose q8h (max: 2 g/dose)	50 mg/kg/dose q12h (max: 2 g/dose)	50 mg/kg/dose q24h (max: 2 g/dose)	50 mg/kg/dose Q24h (max: 1 g/dose)	50 mg/kg/dose q24h (max: 2 g/dose)	25 mg/kg/dose q24h (max: 1 g/dose) OR 50 mg/kg/dose post HD 3x/week (max: 2 g/dose)	50 mg/kg/dose q8h (max: 2 g/dose)
CEFIXIME PO							
Most indications	4 mg/kg/dose q12h (max: 200 mg/dose)	4 mg/kg/dose q12h	4 mg/kg/dose q24h	4 mg/kg/dose q24h	No information, not significantly removed	No information, not significantly removed	No information
CEFOXITIN IV							
Urinary tract infections	20 mg/kg/dose q6h (max: 1 g/dose)	20 mg/kg/dose q8h	20 mg/kg/dose q12h	20 mg/kg/dose q24h	20 mg/kg/dose q24h	20 mg/kg/dose q24h	20 mg/kg/dose q6h
Intra-abdominal infections, pelvic inflammatory disease	40 mg/kg/dose q6h (max: 2 g/dose)	40 mg/kg/dose q8h	40 mg/kg/dose q12h	40 mg/kg/dose q24h	40 mg/kg/dose q24h	40 mg/kg/dose q24h	40 mg/kg/dose q6h
CEFPODOXIME PO							
Most indications	5 mg/kg/dose q12h	5 mg/kg/dose q12h	5 mg/kg/dose q24h	5 mg/kg/dose q24h	No information	5 mg/kg/dose 3x/week	No information
CEFTAROLINE IV							
Skin/soft tissue, urinary tract infections	<u><6 months:</u> 8 mg/kg/dose IV q8h <u>≥6 months & <33 kg:</u> 12 mg/kg/dose IV q8h (max: 400 mg/dose) <u>≥33 kg:</u> 400 mg IV q8h	<u><6 months:</u> 6 mg/kg/dose IV q8h <u>≥6 months & <33 kg:</u> 8 mg/kg/dose IV q8h (max: 300 mg/dose) <u>≥33 kg:</u> 300 mg IV q8h	<u><6 months:</u> 4 mg/kg/dose IV q8h <u>≥6 months & <33 kg:</u> 6 mg/kg/dose IV q8h (max: 200 mg/dose) <u>≥33 kg:</u> 200 mg IV q8h	<u><6 months:</u> 2 mg/kg/dose IV q8h <u>≥6 months & <33 kg:</u> 4 mg/kg/dose IV q8h (max: 120 mg/dose) <u>≥33 kg:</u> 120 mg IV q8h	No information	<u><6 months:</u> 2 mg/kg/dose IV q8h <u>≥6 months & <33 kg:</u> 4 mg/kg/dose IV q8h (max: 120 mg/dose) <u>≥33 kg:</u> 120 mg IV q8h	<u><6 months:</u> 8 mg/kg/dose IV q8h <u>≥6 months & <33 kg:</u> 12 mg/kg/dose IV q8h (max: 400 mg/dose) <u>≥33 kg:</u> 400 mg IV q8h
Bacteremia, MRSA pneumonia, MRSA osteomyelitis	<u><6 months:</u> 10 mg/kg/dose IV q8h <u>≥6 months & <40 kg:</u> 15 mg/kg/dose IV q8h (max: 600 mg/dose) <u>≥40 kg:</u> 600 mg IV q8h	<u><6 months:</u> 8 mg/kg/dose IV q8h <u>≥6 months & <40 kg:</u> 10 mg/kg/dose IV q8h (max: 400 mg/dose) <u>≥40 kg:</u> 400 mg IV q8h	<u><6 months:</u> 6 mg/kg/dose IV q8h <u>≥6 months & <40 kg:</u> 5 mg/kg/dose IV q8h (max: 300 mg/dose) <u>≥40 kg:</u> 300 mg IV q8h	<u><6 months:</u> 3 mg/kg/dose IV q8h <u>≥6 months & <40 kg:</u> 15 mg/kg/dose IV q8h (max: 200 mg/dose) <u>≥40 kg:</u> 200 mg IV q8h	No information	<u><6 months:</u> 3 mg/kg/dose IV q8h <u>≥6 months & <40 kg:</u> 15 mg/kg/dose IV q8h (max: 200 mg/dose) <u>≥40 kg:</u> 200 mg IV q8h	<u><6 months:</u> 10 mg/kg/dose IV q8h <u>≥6 months & <40 kg:</u> 15 mg/kg/dose IV q8h (max: 600 mg/dose) <u>≥40 kg:</u> 600 mg IV q8h

	CrCl ¹ >50 mL/min	CrCl ¹ 50-30 mL/min	CrCl ¹ 29-10 mL/min	CrCl ¹ <10 mL/min	Peritoneal Dialysis	Hemodialysis ²	CRRT ³ Based on eGFR >50 mL/min
CEFTAZIDIME IV							
Systemic infections, CNS infections, Cystic fibrosis	50 mg/kg/dose q8h (max: 2 g/dose)	50 mg/kg/dose q12h	50 mg/kg/dose q24h	50 mg/kg/dose q48h	50 mg/kg/dose q48h	50 mg/kg/dose q48h	50 mg/kg/dose q8h
CEFTAZIDIME-AVIBACTAM IV							
Dosing based on ceftazidime component – For maximum doses, 2 g ceftazidime/dose = 2.5 g ceftazidime-avibactam/dose							
Systemic infections, CNS infections, Cystic fibrosis	50 mg/kg/dose q8h (max: 2 g ceftazidime/dose)	25 mg/kg/dose q8h	19 mg/kg/dose q12h	19 mg/kg/dose q24h	50 mg/kg/dose q48h	19 mg/kg/dose q24h	50 mg/kg/dose q8h
CEFTRIAXONE IV							
Urinary tract infections	50 mg/kg/dose q24h (max: 2 g/dose)	50 mg/kg/dose q24h	50 mg/kg/dose q24h	50 mg/kg/dose q24h	50 mg/kg/dose q24h	50 mg/kg/dose q24h	50 mg/kg/dose q24h
Intra-abdominal infections	75 mg/kg/dose q24h (max: 2 g/dose)	75 mg/kg/dose q24h	75 mg/kg/dose q24h	75 mg/kg/dose q24h	75 mg/kg/dose q24h	75 mg/kg/dose q24h	75 mg/kg/dose q24h
Endocarditis	100 mg/kg/dose q24h (max: 2 g/dose)	100 mg/kg/dose q24h	100 mg/kg/dose q24h	100 mg/kg/dose q24h	100 mg/kg/dose q24h	100 mg/kg/dose q24h	100 mg/kg/dose q24h
Meningitis, community-acquired pneumonia (complicated, underimmunized, or failed high dose amoxicillin), sepsis	50 mg/kg/dose q12h (max: 2 g/dose)	50 mg/kg/dose q12h	50 mg/kg/dose q12h	50 mg/kg/dose q12h	50 mg/kg/dose q12h	50 mg/kg/dose q12h	50 mg/kg/dose q12h
CEFUROXIME AXETIL PO							
Most indications	15 mg/kg/dose q12h (max: 500 mg/dose)	15 mg/kg/dose q12h	15 mg/kg/dose q12h	15 mg/kg/dose q24h	15 mg/kg/dose q24h	15 mg/kg/dose q24h	15 mg/kg/dose q12h
CEFUROXIME IV							
Most indications	50 mg/kg/dose q8h (max: 2 g/dose)	50 mg/kg/dose q8h	50 mg/kg/dose q12h	50 mg/kg/dose q24h	50 mg/kg/dose q24h	50 mg/kg/dose q24h	50 mg/kg/dose q8h
CEPHALEXIN PO							
Urinary tract infections, skin and soft tissue infections	25 mg/kg/dose q8h (max: 1 g/dose)	10 mg/kg/dose q8h	10 mg/kg/dose q12h	10 mg/kg/dose q24h	10 mg/kg/dose q24h	10 mg/kg/dose q24h	25 mg/kg/dose q8h
MSSA community-acquired pneumonia	25 mg/kg/dose q6h (max: 1 g/dose)	25 mg/kg/dose q8h	25 mg/kg/dose q12h	25 mg/kg/dose q24h	20 mg/kg/dose q24h	25 mg/kg/dose q24h	25 mg/kg/dose q6h
Osteomyelitis	37.5 mg/kg/dose q6h (max: 1 g/dose)	37.5 mg/kg/dose q8h	37.5 mg/kg/dose q12h	37.5 mg/kg/dose q24h	20 mg/kg/dose q24h	37.5 mg/kg/dose q24h	37.5 mg/kg/dose q6h

	CrCl ¹ >50 mL/min	CrCl ¹ 50-30 mL/min	CrCl ¹ 29-10 mL/min	CrCl ¹ <10 mL/min	Peritoneal Dialysis	Hemodialysis ²	CRRT ³ Based on eGFR >50 mL/min
CIDOFOVIR IV							
BK virus nephropathy (WITHOUT probenecid)	0.25 mg/kg/dose x1, then discuss repeat dosing with transplant ID team						
Adenovirus viremia (WITH probenecid & hydration)	5 mg/kg/dose x1, then discuss repeat dosing with transplant ID team						
CIPROFLOXACIN PO							
Urinary tract infections	10 mg/kg/dose q12h (max: 500 mg/dose)	10 mg/kg/dose q12h	10 mg/kg/dose q24h	10 mg/kg/dose q24h	No information	10 mg/kg/dose q24h	10 mg/kg/dose q12h
Systemic infections, intra-abdominal infections, invasive <i>Pseudomonas</i> infections	15 mg/kg/dose q12h (max: 750 mg/dose)	15 mg/kg/dose q12h	15 mg/kg/dose q24h	15 mg/kg/dose q24h	No information	15 mg/kg/dose q24h	15 mg/kg/dose q12h
Cystic fibrosis	20 mg/kg/dose q12h (max: 1 g/dose)	20 mg/kg/dose q12h	20 mg/kg/dose q24h	20 mg/kg/dose q24h	No information	15 mg/kg/dose q24h	20 mg/kg/dose q12h
CIPROFLOXACIN IV							
Urinary tract infections, intra-abdominal infections without risk of MDRO, systemic infections	10 mg/kg/dose q12h (max: 400 mg/dose)	10 mg/kg/dose q12h	10 mg/kg/dose q18h	10 mg/kg/dose q24h	10 mg/kg/dose q24h	10 mg/kg/dose q24h	10 mg/kg/dose q12h
Cystic fibrosis, invasive <i>Pseudomonas</i> infections, empiric therapy for risk of MDRO infections, endocarditis	10 mg/kg/dose q8h (max: 400 mg/dose)	10 mg/kg/dose q8h	15 mg/kg/dose q18h	15 mg/kg/dose q24h	15 mg/kg/dose q24h	15 mg/kg/dose q24h	10 mg/kg/dose q8h

	CrCl ¹ >50 mL/min	CrCl ¹ 50-30 mL/min	CrCl ¹ 29-10 mL/min	CrCl ¹ <10 mL/min	Peritoneal Dialysis	Hemodialysis ²	CRRT ³ Based on eGFR >50 mL/min
CLINDAMYCIN PO/IV							
Systemic infections, skin and soft tissue infections	10 mg/kg/dose q8h (max: PO 450 mg/dose; max: IV 900 mg/dose)	10 mg/kg/dose q8h	10 mg/kg/dose q8h	10 mg/kg/dose q8h	10 mg/kg/dose q8h	10 mg/kg/dose q8h	10 mg/kg/dose q8h
Bone and joint infections	13 mg/kg/dose q8h (max: PO 600 mg/dose; max: IV 900 mg/dose)	13 mg/kg/dose q8h	13 mg/kg/dose q8h	13 mg/kg/dose q8h	13 mg/kg/dose q8h	13 mg/kg/dose q8h	13 mg/kg/dose q8h
Group A <i>Streptococcus</i> pharyngitis	7 mg/kg/dose q8h (max: 300 mg/dose)	7 mg/kg/dose q8h	7 mg/kg/dose q8h	7 mg/kg/dose q8h	7 mg/kg/dose q8h	7 mg/kg/dose q8h	7 mg/kg/dose q8h
DAPTOMYCIN IV							
Skin/soft tissue infections	<u>1-<2 years:</u> 10 mg/kg/dose q24h	<u>1-<2 years:</u> 10 mg/kg/dose q24h	<u>1-<2 years:</u> 10 mg/kg/dose q48h	<u>1-<2 years:</u> 10 mg/kg/dose q48h	<u>1-<2 years:</u> 10 mg/kg/dose q48h	<u>1-<2 years:</u> 10 mg/kg/dose q48h	<u>1-<2 years:</u> 10 mg/kg/dose q24h
	<u>2-6 years:</u> 9 mg/kg/dose q24h	<u>2-6 years:</u> 9 mg/kg/dose q24h	<u>2-6 years:</u> 9 mg/kg/dose q48h	<u>2-6 years:</u> 9 mg/kg/dose q48h	<u>2-6 years:</u> 9 mg/kg/dose q48h	<u>2-6 years:</u> 9 mg/kg/dose q48h	<u>2-6 years:</u> 9 mg/kg/dose q24h
	<u>7-11 years:</u> 7 mg/kg/dose q24h	<u>7-11 years:</u> 7 mg/kg/dose q24h	<u>7-11 years:</u> 7 mg/kg/dose q48h	<u>7-11 years:</u> 7 mg/kg/dose q48h	<u>7-11 years:</u> 7 mg/kg/dose q48h	<u>7-11 years:</u> 7 mg/kg/dose q48h	<u>7-11 years:</u> 7 mg/kg/dose q24h
	<u>12-17 years:</u> 5 mg/kg/dose q24h	<u>12-17 years:</u> 5 mg/kg/dose q24h	<u>12-17 years:</u> 5 mg/kg/dose q48h	<u>12-17 years:</u> 5 mg/kg/dose q48h	<u>12-17 years:</u> 5 mg/kg/dose q48h	<u>12-17 years:</u> 5 mg/kg/dose q48h	<u>12-17 years:</u> 5 mg/kg/dose q24h
MRSA/VRE bacteremia, endocarditis, osteomyelitis	10-12 mg/kg/dose q24h	10-12 mg/kg/dose q24h	10-12 mg/kg/dose q48h	10-12 mg/kg/dose q48h	10-12 mg/kg/dose q48h	10-12 mg/kg/dose q48h	10-12 mg/kg/dose q24h
DOXYCYCLINE IV/PO							
Most indications	2.2 mg/kg/dose q12h (max: 100 mg/dose)	2.2 mg/kg/dose q12h (max: 100 mg/dose)	2.2 mg/kg/dose q12h (max: 100 mg/dose)	2.2 mg/kg/dose q12h (max: 100 mg/dose)	2.2 mg/kg/dose q12h (max: 100 mg/dose)	2.2 mg/kg/dose q12h (max: 100 mg/dose)	2.2 mg/kg/dose q12h (max: 100 mg/dose)
ERTAPENEM IV							
Most indications	15 mg/kg/dose q12h (Infants/children max: 500 mg/dose; Adolescents max: 1 g/dose)	15 mg/kg/dose q12h	15 mg/kg/dose q24h	15 mg/kg/dose q24h	15 mg/kg/dose q24h	15 mg/kg/dose q24h	15 mg/kg/dose q12h

	CrCl ¹ >50 mL/min	CrCl ¹ 50-30 mL/min	CrCl ¹ 29-10 mL/min	CrCl ¹ <10 mL/min	Peritoneal Dialysis	Hemodialysis ²	CRRT ³ Based on eGFR >50 mL/min
FLUCONAZOLE IV/PO							
Urinary tract infections	3 mg/kg/dose q24h (max: 200 mg/dose)	1.5 mg/kg/dose q24h	1.5 mg/kg/dose q24h	1.5 mg/kg/dose q48h	1.5 mg/kg/dose q48h	1.5 mg/kg/dose q48h	3 mg/kg/dose q24h
Oropharyngeal, esophageal candidiasis	6 mg/kg/dose q24h (max: 400 mg/dose)	3 mg/kg/dose q24h	3 mg/kg/dose q24h	3 mg/kg/dose q48h	3 mg/kg/dose q48h	3 mg/kg/dose q48h	6 mg/kg/dose q24h
Systemic infections, CNS infections	12 mg/kg/dose q24h (max: 800 mg/dose)	6 mg/kg/dose q24h	6 mg/kg/dose q24h	6 mg/kg/dose q48h	6 mg/kg/dose q48h	6 mg/kg/dose q48h	12 mg/kg/dose q24h
FOSCARNET IV							
	mL/kg/min = [(0.413 x Ht in cm) ÷ SCr] ÷ Wt in kg						
	>1.4 mL/kg/min	1.4-1 mL/kg/min	1-0.8 mL/kg/min	0.79-0.6 mL/kg/min	0.59-0.5 mL/kg/min	0.49-0.4 mL/kg/min	<0.4 mL/kg/min
Induction, CMV	60 mg/kg/dose q12h	45 mg/kg/dose q12h	30 mg/kg/dose q12h	50 mg/kg/dose q24h	35 mg/kg/dose q24h	30 mg/kg/dose q24h	Not recommended
Maintenance, CMV	90 mg/kg/dose q24h	70 mg/kg/dose q24h	50 mg/kg/dose q24h	80 mg/kg/dose q48h	60 mg/kg/dose q48h	50 mg/kg/dose q48h	Not recommended
GANCICLOVIR IV							
Congenital CMV	6 mg/kg/dose q12h	3 mg/kg/dose q24h	1.5 mg/kg/dose q24h	1.5 mg/kg/dose 3 times per week	1.5 mg/kg/dose 3 times per week	1.5 mg/kg/dose 3 times per week	6 mg/kg/dose q12h
Induction, CMV	5 mg/kg/dose q12h	2.5 mg/kg/dose q24h	25 mg/kg/dose q24h	1.25 mg/kg/dose 3 times per week	1.25 mg/kg/dose 3 times per week	1.25 mg/kg/dose 3 times per week	5 mg/kg/dose q12h
Maintenance, CMV	5 mg/kg/dose q24h	1.25 mg/kg/dose q24h	0.625 mg/kg/dose q24h	0.625 mg/kg/dose 3 times per week	0.625 mg/kg/dose 3 times per week	0.625 mg/kg/dose 3 times per week	5 mg/kg/dose q24h
GENTAMICIN⁴ IV							
	See Empiric Dosing and Monitoring Recommendations for Aminoglycosides in Pediatric Patients						
IMIPENEM IV							
Systemic infections other than those listed below	15 mg/kg/dose q6h (max: 500 mg/dose)	7.5 mg/kg/dose q8h (max 500 mg/dose)	7.5 mg/kg/dose q12h (max: 500 mg/dose)	7.5 mg/kg/dose q24h (max: 250 mg/dose)	7.5 mg/kg/dose q24h (max: 250 mg/dose)	7.5 mg/kg/dose q24h (max: 250 mg/dose)	7.5 mg/kg/dose q8h (max: 500 mg/dose)
Cystic fibrosis, CNS infections	25 mg/kg/dose q6h (max: 1 g/dose)	12.5 mg/kg/dose q8h (max: 1 g/dose)	12.5 mg/kg/dose q12h (max: 1 g/dose)	12.5 mg/kg/dose q24h (max: 500 mg/dose)	12.5 mg/kg/dose q24h (max: 500 mg/dose)	12.5 mg/kg/dose q24h (max: 500 mg/dose)	12.5 mg/kg/dose q8h (max: 500 mg/dose)
ITRACONAZOLE PO							
Histoplasmosis, Blastomycosis	5 mg/kg/dose q12h (max: 400 mg/dose)	5 mg/kg/dose q12h	5 mg/kg/dose q12h	5 mg/kg/dose q12h	5 mg/kg/dose q12h	5 mg/kg/dose q12h	5 mg/kg/dose q12h

	CrCl ¹ >50 mL/min	CrCl ¹ 50-30 mL/min	CrCl ¹ 29-10 mL/min	CrCl ¹ <10 mL/min	Peritoneal Dialysis	Hemodialysis ²	CRRT ³ Based on eGFR >50 mL/min
LEVOFLOXACIN IV/PO							
Urinary tract infections	<5 years: 8 mg/kg/dose q12h (max: 375 mg/dose) ≥5 years: 8 mg/kg/dose q24h (max: 750 mg/dose)	<5 years: 8 mg/kg/dose q12h (max: 375 mg/dose) ≥5 years: 8 mg/kg/dose q24h (max: 750 mg/dose)	8 mg/kg/dose q24h	8 mg/kg/dose q48h	8 mg/kg/dose q48h	8 mg/kg/dose q48h	<5 years: 8 mg/kg/dose q12h (max: 375 mg/dose) ≥5 years: 8 mg/kg/dose q24h (max: 750 mg/dose)
Systemic infections	<5 years: 10 mg/kg/dose q12h (max: 375 mg/dose) ≥5 years: 10 mg/kg/dose q24h (max: 750 mg/dose)	<5 years: 10 mg/kg/dose q12h (max: 375 mg/dose) ≥5 years: 10 mg/kg/dose q24h (max: 750 mg/dose)	10 mg/kg/dose q24h	10 mg/kg/dose q48h	10 mg/kg/dose q48h	10 mg/kg/dose q48h	<5 years: 10 mg/kg/dose q12h (max: 375 mg/dose) ≥5 years: 10 mg/kg/dose q24h (max: 750 mg/dose)
LINEZOLID IV/PO							
<12 years:	10 mg/kg/dose q8h (max: 600 mg/dose)	10 mg/kg/dose q8h	10 mg/kg/dose q8h	10 mg/kg/dose q8h	10 mg/kg/dose q12h	10 mg/kg/dose q12h	10 mg/kg/dose q8h
≥12 years:	10 mg/kg/dose q12h (max: 600 mg/dose)	10 mg/kg/dose q12h	10 mg/kg/dose q12h	10 mg/kg/dose q12h	10 mg/kg/dose q12h	10 mg/kg/dose q12h	10 mg/kg/dose q12h
MEROPENEM IV							
Extended infusion over 3 hours is preferred for most patients							
Systemic infections other than those listed below	20 mg/kg/dose q8h (max: 1 g/dose)	20 mg/kg/dose q12h (max: 1 g/dose)	10 mg/kg/dose q12h (max: 500 mg/dose)	10 mg/kg/dose q24h (max: 500 mg/dose)	10 mg/kg/dose q24h (max: 500 mg/dose)	10 mg/kg/dose q24h (max: 500 mg/dose)	20 mg/kg/dose q8h (max: 1 g/dose)
Suspected or proven <i>Acinetobacter</i> or <i>Pseudomonas</i> infection, cystic fibrosis, febrile neutropenia, CNS infection, septic shock, burn infection	40 mg/kg/dose q8h (max: 2 g/dose)	40 mg/kg/dose q12h (max: 2 g/dose)	20 mg/kg/dose q12h (max: 1 g/dose)	20 mg/kg/dose q24h (max: 1 g/dose)	20 mg/kg/dose q24h (max: 1 g/dose)	20 mg/kg/dose q24h (max: 1 g/dose)	40 mg/kg/dose q8h (max: 2 g/dose)
METRONIDAZOLE PO							
Mild-moderate <i>C difficile</i> infection	7.5 mg/kg/dose q6h (max: 500 mg/dose)	7.5 mg/kg/dose q6h	7.5 mg/kg/dose q6h	4 mg/kg/dose q6h	4 mg/kg/dose q6h	4 mg/kg/dose q6h	7.5 mg/kg/dose q6h
Systemic infections, CNS infections	10 mg/kg/dose q8h (max: 500 mg/dose)	10 mg/kg/dose q8h	10 mg/kg/dose q8h	4 mg/kg/dose q6h	4 mg/kg/dose q6h	4 mg/kg/dose q6h	10 mg/kg/dose q8h

	CrCl ¹ >50 mL/min	CrCl ¹ 50-30 mL/min	CrCl ¹ 29-10 mL/min	CrCl ¹ <10 mL/min	Peritoneal Dialysis	Hemodialysis ²	CRRT ³ Based on eGFR >50 mL/min
METRONIDAZOLE IV							
Intra-abdominal infections	10 mg/kg/dose q8h (max: 500 mg/dose) OR 30 mg/kg/dose q24h (max: 1.5 g/dose)	10 mg/kg/dose q8h OR 30 mg/kg/dose q24h	10 mg/kg/dose q8h OR 30 mg/kg/dose q24h	4 mg/kg/dose q6h	4 mg/kg/dose q6h	4 mg/kg/dose q6h	10 mg/kg/dose q8h OR 30 mg/kg/dose q24h
Fulminant <i>C difficile</i> infection	7.5 mg/kg/dose q6h (max: 500 mg/dose)	7.5 mg/kg/dose q6h	7.5 mg/kg/dose q6h	4 mg/kg/dose q6h	4 mg/kg/dose q6h	4 mg/kg/dose q6h	7.5 mg/kg/dose q6h
Systemic infections, CNS infections	10 mg/kg/dose q8h (max: 500 mg/dose)	10 mg/kg/dose q8h	10 mg/kg/dose q8h	4 mg/kg/dose q6h	4 mg/kg/dose q6h	4 mg/kg/dose q6h	10 mg/kg/dose q8h
MICAFUNGIN IV							
Prophylaxis	3 mg/kg/dose q24h (max: 50 mg/dose)	3 mg/kg/dose q24h	3 mg/kg/dose q24h	3 mg/kg/dose q24h	3 mg/kg/dose q24h	3 mg/kg/dose q24h	3 mg/kg/dose q24h
Treatment	5 mg/kg/dose q24h (max: 150 mg/dose)	5 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q24h
NAFILLIN IV							
Systemic infections, CNS infections	37.5 mg/kg/dose q6h (max: 2 g/dose)	37.5 mg/kg/dose q6h	37.5 mg/kg/dose q6h adjustment may be required for concomitant hepatic failure	37.5 mg/kg/dose q6h adjustment may be required for concomitant hepatic failure	37.5 mg/kg/dose q6h adjustment may be required for concomitant hepatic failure	37.5 mg/kg/dose q6h adjustment may be required for concomitant hepatic failure	37.5 mg/kg/dose q6h adjustment may be required for concomitant hepatic failure
Endocarditis	33 mg/kg/dose q4h (max: 2 g/dose)	33 mg/kg/dose q4h	33 mg/kg/dose q4h adjustment may be required for concomitant hepatic failure	33 mg/kg/dose q4h adjustment may be required for concomitant hepatic failure	33 mg/kg/dose q4h adjustment may be required for concomitant hepatic failure	33 mg/kg/dose q4h adjustment may be required for concomitant hepatic failure	33 mg/kg/dose q4h adjustment may be required for concomitant hepatic failure

	CrCl ¹ >50 mL/min	CrCl ¹ 50-30 mL/min	CrCl ¹ 29-10 mL/min	CrCl ¹ <10 mL/min	Peritoneal Dialysis	Hemodialysis ²	CRRT ³ Based on eGFR >50 mL/min	
NITROFURANTOIN PO (monohydrate/macro-crystals capsules, Macrobid®)								
Cystitis	100 mg q12h	100 mg q12h	Not recommended					
NITROFURANTOIN PO (suspension, Macrochantin®)								
Cystitis								
7-11.9 kg	12.5 mg q6h	12.5 mg q6h	Not recommended					
12-21.9 kg	25 mg q6h	25 mg q6h						
22-30.9 kg	37.5 mg q6h	37.5 mg q6h						
31-41.9 kg	50 mg q6h	50 mg q6h						
≥42 kg	75 mg q6h	75 mg q6h						
OSELTAMIVIR PO								
Treatment (duration = 5 days)								
≤8 months	3 mg/kg/dose q12h (max: 30 mg/dose)	3 mg/kg/dose q12h (max: 30 mg/dose)	3 mg/kg/dose q24h (max: 30 mg/dose)	3 mg/kg/dose q48h (max: 30 mg/dose)	3 mg/kg/dose q48h (max: 30 mg/dose)	7.5 mg x1, then 7.5 mg post each HD session	3 mg/kg/dose q12h (max: 30 mg/dose)	
9 months to 11 months	3.5 mg/kg/dose q12h (max: 30 mg/dose)	3.5 mg/kg/dose q12h (max: 30 mg/dose)	3.5 mg/kg/dose q24h (max: 30 mg/dose)	3.5 mg/kg/dose q48h (max: 30 mg/dose)	3.5 mg/kg/dose q48h (max: 30 mg/dose)	7.5 mg x1, then 7.5 mg post each HD session	3.5 mg/kg/dose q12h (max: 30 mg/dose)	
12 months to 17 years	≤15 kg	30 mg q12h	30 mg q12h	30 mg q24h	30 mg q48h	30 mg q48h	7.5 mg x1, then 7.5 mg post each HD session	30 mg q12h
	>15-23 kg	45 mg q12h	45 mg q12h	45 mg q24h	45 mg q48h	45 mg q48h	10 mg x1, then 10 mg post each HD session	45 mg q12h
	>23-40 kg	60 mg q12h	60 mg q12h	60 mg q24h	60 mg q48h	60 mg q48h	15 mg x1, then 15 mg post each HD session	60 mg q12h
	>40 kg	75 mg q12h	75 mg q12h	75 mg q24h	75 mg q48h	75 mg q48h	30 mg x1, then 30 mg post each HD session	75 mg q12h

		CrCl ¹ >50 mL/min	CrCl ¹ 50-30 mL/min	CrCl ¹ 29-10 mL/min	CrCl ¹ <10 mL/min	Peritoneal Dialysis	Hemodialysis ²	CRRT ³ Based on eGFR >50 mL/min
OSELTAMIVIR PO								
Prophylaxis (duration = 7 days)								
<3 months		Not recommended						
3 months to 8 months		3 mg/kg/dose q24h (max: 30 mg/dose)	3 mg/kg/dose q24h (max: 30 mg/dose)	3 mg/kg/dose q48h (max: 30 mg/dose)	3 mg/kg/dose 2x/week (max: 30 mg/dose)	3 mg/kg/dose 2x/week (max: 30 mg/dose)	7.5 mg x1, then 7.5 mg post each HD session	3 mg/kg/dose q24h
9 months to 11 months		3.5 mg/kg/dose q24h (max: 30 mg/dose)	3.5 mg/kg/dose q24h (max: 30 mg/dose)	3.5 mg/kg/dose q48h (max: 30 mg/dose)	3.5 mg/kg/dose 2x/week (max: 30 mg/dose)	3.5 mg/kg/dose 2x/week (max: 30 mg/dose)	7.5 mg x1, then 7.5 mg post each HD session	3.5 mg/kg/dose q24h (max: 30 mg/dose)
12 months to 17 years	≤15 kg	30 mg q24h	30 mg q24h	30 mg q48h	30 mg 2x/week	30 mg 2x/week	7.5 mg x1, then 7.5 mg post each HD session	30 mg q24h
	>15-23 kg	45 mg q24h	45 mg q24h	45 mg q48h	45 mg 2x/week	45 mg 2x/week	10 mg x1, then 10 mg post each HD session	45 mg q24h
	>23-40 kg	60 mg q24h	60 mg q24h	60 mg q48h	60 mg 2x/week	60 mg 2x/week	15 mg x1, then 15 mg post each HD session	60 mg q24h
	>40 kg	75 mg q24h	75 mg q24h	75 mg q48h	75 mg 2x/week	75 mg 2x/week	30 mg x1, then 30 mg post each HD session	75 mg q24h
PENICILLIN G IV								
Endocarditis		50,000 units/kg/dose q4h (max: 4 million units/dose)	50,000 units/kg/dose q4h	50,000 units/kg/dose q8h	25,000 units/kg/dose q8h	25,000 units/kg/dose q8h	25,000 units/kg/dose q8h	50,000 units/kg/dose q4h
Pneumococcal or meningococcal meningitis		75,000 units/kg/dose q6h (max: 6 million units/dose)	75,000 units/kg/dose q6h	75,000 units/kg/dose q8h	37,500 units/kg/dose q8h	37,500 units/kg/dose q8h	37,500 units/kg/dose q8h	75,000 units/kg/dose q6h
Group B <i>Streptococcus</i> meningitis		125,000 units/kg/dose q6h (max: 6 million units/dose)	125,000 units/kg/dose q6h	125,000 units/kg/dose q8h	62,500 units/kg/dose q8h	62,500 units/kg/dose q8h	62,500 units/kg/dose q8h	125,000 units/kg/dose q6h
Systemic infections		37,500 units/kg/dose q6h (max: 2 million units/dose)	37,500 units/kg/dose q6h	37,500 units/kg/dose q8h	18,750 units/kg/dose q8h	18,750 units/kg/dose q8h	18,750 units/kg/dose q8h	37,500 units/kg/dose q6h
PENTAMIDINE IV								
Treatment, <i>Pneumocystis</i> pneumonia		4 mg/kg/dose q24h	4 mg/kg/dose q24h	4 mg/kg/dose q36h	4 mg/kg/dose q48h	4 mg/kg/dose q48h	4 mg/kg/dose q48h	4 mg/kg/dose q24h

	CrCl ¹ >50 mL/min	CrCl ¹ 50-30 mL/min	CrCl ¹ 29-10 mL/min	CrCl ¹ <10 mL/min	Peritoneal Dialysis	Hemodialysis ²	CRRT ³ Based on eGFR >50 mL/min
PERAMIVIR IV							
Treatment (hospitalized / high-risk) (duration ≤ 5 days)							
3 months to 6 months	10 mg/kg/dose q24h	2.5 mg/kg/dose q24h	1.6 mg/kg/dose q24h	1.6 mg/kg/dose x1, then 0.25 mg/kg/dose q24h	1.6 mg/kg/dose x1, then 0.25 mg/kg/dose q24h	1.6 mg/kg/dose x1 then 1.6 mg/kg/dose 2h post each HD session	10 mg/kg/dose q24h
>6 months to 5 years	12 mg/kg/dose q24h (max: 600 mg/dose)	3 mg/kg/dose q24h (max: 150 mg/dose)	2 mg/kg/dose q24h (max: 100 mg/dose)	2 mg/kg/dose x1 (max: 100 mg/dose), then 0.3 mg/kg/dose q24h (max: 15 mg/dose)	2 mg/kg/dose x1 (max: 100 mg/dose) then 0.3 mg/kg/dose q24h (max: 15 mg/dose)	2 mg/kg/dose x1 (max 100 mg/dose) then 2 mg/kg/dose 2h post each HD session (max 100 mg/dose)	12 mg/kg/dose q24h (max: 600 mg/dose)
6 years to 17 years	12 mg/kg/dose q24h (max: 600 mg/dose)	2.5 mg/kg/dose q24h (max: 150 mg/dose)	1.6 mg/kg/dose q24h (max: 100 mg/dose)	1.6 mg/kg/dose x1 (max: 100 mg/dose), then 0.25 mg/kg/dose q24h (max: 15 mg/dose)	1.6 mg/kg/dose x1 (max: 100 mg/dose) then 0.25 mg/kg/dose q24h (max: 15 mg/dose)	1.6 mg/kg/dose x1 (max 100 mg/dose) then 1.6 mg/kg/dose 2h post each HD session (max 100 mg/dose)	12 mg/kg/dose q24h (max: 600 mg/dose)
Treatment (uncomplicated)							
6 months to 17 years	12 mg/kg/dose x1 (max: 600 mg/dose)	4 mg/kg/dose x1 (max: 200 mg/dose)	2 mg/kg/dose x1 (max: 100 mg/dose)	2 mg/kg/dose x1 (max: 100 mg/dose)	2 mg/kg/dose x1 (max: 100 mg/dose)	2 mg/kg/dose x1 (max: 100 mg/dose) - give 2h after HD session if patient is receiving dialysis that day	12 mg/kg/dose x 1 (max: 600 mg/dose)
PIPERACILLIN-TAZOBACTAM IV							
Dosing based on piperacillin component – For maximum doses, 4 g piperacillin/dose = 4.5 g piperacillin-tazobactam/dose Extended infusion over 3 hours is preferred for most patients							
Systemic infections, empiric therapy for febrile neutropenia	75 mg/kg/dose q6h (max: 4 g piperacillin/dose)	75 mg/kg/dose q6h	75 mg/kg/dose q8h	75 mg/kg/dose q12h	75 mg/kg/dose q12h	75 mg/kg/dose q12h	75 mg/kg/dose q6h
Cystic fibrosis	100 mg/kg/dose q6h (max: 4 g piperacillin/dose)	75 mg/kg/dose q6h	75 mg/kg/dose q8h	75 mg/kg/dose q8h	75 mg/kg/dose q12h	75 mg/kg/dose q12h	100 mg/kg/dose q6h
POSACONAZOLE IV/PO							
Refer to Bone Marrow Transplant Infection Prophylaxis or Aspergillosis/Mucormycosis Guidelines							
RIFAMPIN IV/PO							
Endocarditis	7 mg/kg/dose q8h (max: 300 mg/dose)	7 mg/kg/dose q8h	7 mg/kg/dose q8h	7 mg/kg/dose q8h	7 mg/kg/dose q8h	7 mg/kg/dose q8h	7 mg/kg/dose q8h

	CrCl ¹ >50 mL/min	CrCl ¹ 50-30 mL/min	CrCl ¹ 29-10 mL/min	CrCl ¹ <10 mL/min	Peritoneal Dialysis	Hemodialysis ²	CRRT ³ Based on eGFR >50 mL/min
TMP-SMX (BACTRIM®) IV/PO	Dosing based on trimethoprim component						
Most infections	6 mg/kg/dose IV/PO q12h (max: 320 mg/dose)	6 mg/kg/dose IV/PO q12h	3 mg/kg/dose IV/PO q12h	3 mg/kg/dose IV/PO q24h	5 mg/kg/dose IV/PO q24h (max: 80 mg/dose)	3 mg/kg/dose IV/PO q24h	5-6 mg/kg/dose IV/PO q12h
<i>Pneumocystis pneumonia</i>	5 mg/kg/dose IV q6h OR 10 mg/kg/dose PO q12h (max: 320 mg/dose)	5 mg/kg/dose IV q6h OR 10 mg/kg/dose PO q12h	5 mg/kg/dose IV/PO q12h	5 mg/kg/dose IV/PO q24h	5 mg/kg/dose IV/PO q24h (max: 80 mg/dose)	5 mg/kg/dose IV/PO q24h	5 mg/kg/dose IV q6h OR 10 mg/kg/dose PO q12h
TOBRAMYCIN⁴ IV	See Empiric Dosing and Monitoring Recommendations for Aminoglycosides in Pediatric Patients						
VALGANCICLOVIR PO	See Empiric Dosing and Monitoring Recommendations for Vancomycin						
Congenital CMV	16 mg/kg/dose q12h	8 mg/kg/dose q24h	8 mg/kg/dose q48h	Give IV ganciclovir 2.5 mg/kg/dose 3 times per week	No information	Give IV ganciclovir 2.5 mg/kg/dose 3 times per week	Give IV ganciclovir 2.5 mg/kg/dose q24h
Prophylaxis/Treatment of CMV	Refer to appropriate transplant guidelines						
VANCOMYCIN⁴ IV	See Empiric Dosing and Monitoring Recommendations for Vancomycin						
VORICONAZOLE IV/PO	See Empiric Dosing and Monitoring Recommendations for Vancomycin						
<16 years ⁵	9 mg/kg/dose q12h	9 mg/kg/dose q12h	9 mg/kg/dose q12h	9 mg/kg/dose q12h	9 mg/kg/dose q12h	9 mg/kg/dose q12h	9 mg/kg/dose q12h
≥16 years ⁵	6 mg/kg/dose q12h x2 doses, then 4 mg/kg/dose q12h	6 mg/kg/dose q12h x2 doses, then 4 mg/kg/dose q12h	6 mg/kg/dose q12h x2 doses, then 4 mg/kg/dose q12h	6 mg/kg/dose q12h x2 doses, then 4 mg/kg/dose q12h	6 mg/kg/dose q12h x2 doses, then 4 mg/kg/dose q12h	6 mg/kg/dose q12h x2 doses, then 4 mg/kg/dose q12h	6 mg/kg/dose q12h x2 doses, then 4 mg/kg/dose q12h
ZANAMIVIR INHALED	See Empiric Dosing and Monitoring Recommendations for Vancomycin						
Treatment (duration = 5 days)	See Empiric Dosing and Monitoring Recommendations for Vancomycin						
≥7 years	10 mg (2 inhalations) twice daily	10 mg (2 inhalations) twice daily	10 mg (2 inhalations) twice daily	10 mg (2 inhalations) twice daily	10 mg (2 inhalations) daily	10 mg (2 inhalations) daily	10 mg (2 inhalations) twice daily
<7 years	Not recommended						
Prophylaxis (duration = 7 days)	See Empiric Dosing and Monitoring Recommendations for Vancomycin						
≥5 years	10 mg (2 inhalations) daily	10 mg (2 inhalations) daily	10 mg (2 inhalations) daily	10 mg (2 inhalations) daily	10 mg (2 inhalations) daily	10 mg (2 inhalations) daily	10 mg (2 inhalations) daily
<5 years	Not recommended						

Footnotes:

1. Modified Schwartz equation: $CrCl (ml/min) = \frac{0.413 * ht (cm)}{SCr (mg/dL)}$
2. Patients receiving Hemodialysis should have antimicrobials administered after dialysis on dialysis days.
3. CRRT = Continuous renal replacement therapy; For patients on CRRT: $eGFR (mL/min) = D_{rate} (mL/h) * \frac{1 h}{60 min} * \frac{1.73 m^2}{BSA in m^2}$; dose antibiotic based on corresponding calculated CrCl
4. All patients on vancomycin or an aminoglycoside are evaluated by a pharmacist daily. For kinetics consultation with a pediatric pharmacist regarding special patient populations (e.g., those on ECMO or CRRT, or those with renal insufficiency), please contact the pharmacy at (76)4-8208.
5. Recommend oral formulation; IV vehicle (SCECD) can accumulate when CrCl <50 mL/min. Only use IV formulation if benefit/risk to patient justifies use.

Amoxicillin:Clavulanate Formulations			
Amax:clav ratio	Tablet	Suspension	Comments
4:1	500-125 mg	250-62.5 mg/5 mL <u>or</u> 125-31.25 mg/5 mL	Clavulanate doses should not exceed 5 mg/kg/dose (125 mg/dose) or 10 mg/kg/day (375 mg/day)
7:1	875-125 mg	400-57 mg/5 mL <u>or</u> 200-28.5 mg/5 mL	
14:1	N/A	600-42.9 mg/5 mL	Tablets may be crushed, mixed with feeds, and/or administered through enteral tubes

References:

1. Lexicomp®. 2023 Wolters Kluwer Clinical Drug Information, Inc.
2. <https://dailymed.nlm.nih.gov/dailymed/>
3. Arrieta AC, et al. Randomized multicenter study comparing safety and efficacy of daptomycin versus standard-of-care in pediatric patients with Staphylococcal bacteremia. [Pediatr Infect Dis J 2018;37\(9\):893-900.](#)
4. American Academy of Pediatrics. In: Kimberlin DW, Brady MT, Jackson MA, Long SS, eds. Red Book: 2018 Report of the Committee on Infectious Diseases. American Academy of Pediatrics; 2018.
5. <https://kdpnet.kdp.louisville.edu/drugbook/pediatric/>
6. Warady BA, et al. Consensus guidelines for the prevention and treatment of catheter-related infections and peritonitis in pediatric patients receiving peritoneal dialysis: 2012 update. [Perit Dial Int 2012;32\(Suppl 2\):S32-S86.](#)
7. <https://www.cdc.gov/h1n1flu/recommendations.htm>
8. Oplinger M, Andrews CO. Nitrofurantoin contraindications in patients with creatinine clearance below 60 mL/min: looking for the evidence. [Ann Pharmacother 2013;47:106-11.](#)
9. www.Clinicaltrials.gov
10. Cies JJ, et al. Ceftaroline for suspected or confirmed invasive Methicillin-Resistant *Staphylococcus aureus*: a pharmacokinetic case series. [Pediatr Crit Care Med 2018;19:e292-e299.](#)
11. Bradley JS, et al. Phase I study assessing the pharmacokinetic profile, safety, and tolerability of a single dose of ceftazidime-avibactam in hospitalized pediatric patients. [Antimicrob Agents Chemother 2016;60\(10\):6252-6259.](#)
12. Courter JD, et al. Optimizing bactericidal exposure for β-lactams using prolonged and continuous infusions in the pediatric population. [Pediatr Blood Cancer 2009;53:379-85.](#)
13. Hartman SJ, et al. Pharmacokinetics and target attainment of antibiotics in critically ill children: a systematic review of current literature. [Clin Pharmacokinet. 2020 Feb;59\(2\):173-205.](#)
14. Cies JJ, et al. Therapeutic drug monitoring of prolonged infusion aztreonam for multi-drug resistant *Pseudomonas aeruginosa*: a case report. [J Pediatr Pharmacol Ther 2017;22\(6\):467-70.](#)
15. Stutman HR, et al. Single-dose pharmacokinetics of aztreonam in pediatric patients. [Antimicrob Agents Chemother 1984;26\(2\):196-9.](#)

Current Authors:

Karen Davidge, PharmD; Pediatric Infectious Diseases and Antimicrobial Stewardship
Daniel Riggsbee, PharmD; Pediatric Infectious Diseases and Antimicrobial Stewardship

Current Consultants:

Jourdan Butchin, PharmD; Pediatric Clinical Pharmacy Specialist (PICU)
Nicholas Dillman, PharmD; Ambulatory Antimicrobial Stewardship
Ashley Huebschman, PharmD; Pediatric Clinical Pharmacy Specialist (Cardiology)
Brett Leja, PharmD; Pediatric Clinical Pharmacy Specialist (PICU)
Erin Munsel, PharmD; Pediatric Clinical Pharmacy Specialist (NICU)
Kayla Rice, PharmD; Pediatric Clinical Pharmacy Specialist (NICU)
Alison Tribble, MD; Pediatric Infectious Diseases and Antimicrobial Stewardship

Past Author:

Kristin Klein, PharmD; Pediatric Infectious Diseases and Antimicrobial Stewardship

Past Consultants:

Beth Bisaccia, PharmD; Pediatric Clinical Pharmacy Specialist (General Pediatrics)
Courtney Doellner, PharmD; Pediatric Clinical Pharmacy Specialist (Pediatric Surgery)
Audrey Jarosz, PharmD; Pediatric Clinical Pharmacy Specialist (Cardiology)
Varsha Mehta, PharmD; Pediatric Clinical Pharmacy Specialist (NICU)
Valerie Nolt, PharmD; Pediatric Clinical Pharmacy Specialist (General Pediatrics)
Abbie Schauble, PharmD; Pediatric Clinical Pharmacy Specialist (PICU)
Pediatric Antimicrobial Workgroup (7/24/2019)

Antimicrobial Subcommittee Approval: 08/2019; 06/2020; 02/2023; 11/2023	Originated: 01/2019
P&T Approval: 09/2019; 07/2020; 03/2023	Last Revised: 11/2023
Revision History: 12/20: Updated ceftazidime-avibactam dosing 03/21: Updated aminoglycoside and vancomycin hyperlinks 02/23: Updated aztreonam, cefepime, imipenem, meropenem, and piperacillin-tazobactam dosing 11/23: Updated acyclovir, amoxicillin-clavulanate, doxycycline, oseltamivir, and peramivir dosing	

The recommendations in this guide are meant to serve as treatment guidelines for use at Michigan Medicine facilities. If you are an individual experiencing a medical emergency, call 911 immediately. These guidelines should not replace a provider's professional medical advice based on clinical judgment, or be used in lieu of an Infectious Diseases consultation when necessary. As a result of ongoing research, practice guidelines may from time to time change. The authors of these guidelines have made all attempts to ensure the accuracy based on current information, however, due to ongoing research, users of these guidelines are strongly encouraged to confirm the information contained within them through an independent source.

If obtained from a source other than med.umich.edu/asp, please visit the webpage for the most up-to-date document.