



Pediatric Antimicrobial Renal Dosing Guidelines

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Antibiotic Intravenous (IV) GENERIC (Brand [®])	Estimated Creatinine Clearance (mL/min)				HD (give after HD)	CRRT ²
	> 50	25 - 50	10 - 24	< 10		
ACYCLOVIR (Zovirax [®])	5-10 mg/kg/dose q8h					
- HSV infection	5-10 mg/kg/dose q8h	5-10 mg/kg/dose q12h	5-10 mg/kg/dose q24h	2.5-5 mg/kg/dose q24h	2.5-5 mg/kg/dose q24h post HD	5 mg/kg/dose q12h
- Herpes Zoster	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 post HD	10 mg/kg/dose q12h
- HSV encephalitis	10-15 mg/kg/dose q8h	10-15 mg/kg/dose q12h	10-15 mg/kg/dose q24h	5-7.5 mg/kg/dose q24h	5-7.5 mg/kg/dose q24h post HD	10 mg/kg/dose q12h
- Neonatal infections	20 mg/kg/dose q8h	20 mg/kg/dose q12h	20 mg/kg/dose q24h	10 mg/kg/dose q24h	10 mg/kg/dose q24h post HD	20 mg/kg/dose q12h
AMIKACIN	See back of card					
AMPICILLIN	Max Daily Dose = 12g					
- Mild-moderate infection	25-50 mg/kg/dose q6h	25-50 mg/kg/dose q6-8h	25-50 mg/kg/dose q8-12h	25-50 mg/kg/dose q12h	25-50 mg/kg/dose q12h	25-50 mg/kg/dose q6h
- Severe infection (CNS)	50-100 mg/kg/dose q6h	50-100 mg/kg/dose q6-8h	50-100 mg/kg/dose q8-12h	50-100 mg/kg/dose q12h	50-100 mg/kg/dose q12h	50-100 mg/kg/dose q6h
AMPICILLIN/SULBACTAM (Unasyn [®])	Dosing based on Ampicillin component. Max Daily Dose = 8g of Ampicillin (12g Ampicillin/Sulbactam)					
- Mild-moderate infection	25-50 mg/kg/dose q6h	25-50 mg/kg/dose q6-8h	25-50 mg/kg/dose q12h	25-50 mg/kg/dose q24h	25-50 mg/kg/dose q12-24h	25-50 mg/kg/dose q8hr
- Severe infection (CNS)	50-100 mg/kg/dose q6h	50-100 mg/kg/dose q6-8h	50-100 mg/kg/dose q12h	50-100 mg/kg/dose q24h	50-100 mg/kg/dose q12-24h	50-100 mg/kg/dose q8hr
AZTRONAM (Azactam [®]) ¹	Max Daily Dose = 8g					
- Mild-moderate infection	30 mg/kg/dose q8h	30 mg/kg/dose q8h	15-20 mg/kg/dose q8h	7.5-10 mg/kg/dose q12h	7.5-10 mg/kg/dose q12h	30 mg/kg/dose q8h
- Severe infection	30 mg/kg/dose q6h	30 mg/kg/dose q6h	15-20 mg/kg/dose q8h	7.5-10 mg/kg/dose q12h	7.5-10 mg/kg/dose q12h	30 mg/kg/dose q6h
CEFAZOLIN (Ancef [®])	Max Daily Dose = 6g					
- Mild-moderate infection	25 mg/kg/dose q8h	25 mg/kg/dose q8h	25 mg/kg/dose q12h	25 mg/kg/dose q24h	25 mg/kg/dose q24h	25 mg/kg/dose q8h
- Severe infection	50 mg/kg/dose q8h	50 mg/kg/dose q8h	25-50 mg/kg/dose q12h	25-50 mg/kg/dose q24h	25 mg/kg/dose q24h	25 mg/kg/dose q8h
CEFEPIME (Maxipime [®])	Max Daily Dose = 6g					
- Mild-moderate infection	50 mg/kg/dose q12h	50 mg/kg/dose q24h	50 mg/kg/dose q24h	50 mg/kg/dose q48h	50 mg/kg/dose q24h	50 mg/kg/dose q12h
- Febrile neutropenia, meningitis, CF, endocarditis	50 mg/kg/dose q12h	50 mg/kg/dose q12h	50 mg/kg/dose q24h	50 mg/kg/dose q24h	50 mg/kg/dose q24h	50 mg/kg/dose q12h
CEFOTAXIME (Claforan [®])	Max Daily Dose = 12g					
- Mild-moderate infection	50 mg/kg/dose q8h	50 mg/kg/dose q8h	50 mg/kg/dose q12h	50 mg/kg/dose q24h	50 mg/kg/dose q24h	50 mg/kg/dose q12h
- Severe infection (CNS)	50 mg/kg/dose q6h	50 mg/kg/dose q6h	50 mg/kg/dose q12h	50 mg/kg/dose q24h	50 mg/kg/dose q24h	50 mg/kg/dose q8h
CEFOXITIN (Mefoxin [®])	Max Daily Dose = 8g					
- Mild-moderate infection	20 mg/kg/dose q6h	20 mg/kg/dose q8h	20 mg/kg/dose q12h	20 mg/kg/dose q24h	20 mg/kg/dose q24h	20 mg/kg/dose q8h
- Severe infection	40 mg/kg/dose q6h	40 mg/kg/dose q8h	40 mg/kg/dose q12h	40 mg/kg/dose q24h	40 mg/kg/dose q24h	40 mg/kg/dose q8h
CEFTAZIDIME (Fortaz [®]) ¹	Max Daily Dose = 6g					
- Mild-moderate infection	30 mg/kg/dose q8h	30 mg/kg/dose q12h	30 mg/kg/dose q24h	30 mg/kg/dose q48h	30 mg/kg/dose q48h	30 mg/kg/dose q12h
- Severe infection	50 mg/kg/dose q8h	50 mg/kg/dose q12h	50 mg/kg/dose q24h	50 mg/kg/dose q48h	50 mg/kg/dose q48h	50 mg/kg/dose q12h
CEFTRIAXONE (Rocephin [®])	Max Daily Dose = 4g					
- Mild-moderate infection	50 mg/kg/dose q24h	No change	No change	No change	No change	No change
- Severe infection (CNS)	50 mg/kg/dose q12h	No change	No change	No change	No change	No change
CIDOFOVIR	5 mg/kg weekly					
	5 mg/kg weekly	1 mg/kg 3x per week	1 mg/kg 3x per week	0.5 mg/kg weekly	2 mg/kg weekly (Administer 2 hrs before session)	2 mg/kg weekly
CIPROFLOXACIN (Cipro [®])	Max Daily Dose = 1.2g					
- Mild-moderate infection	10 mg/kg/dose q12h	10 mg/kg/dose q12h	10 mg/kg/dose q18h	10 mg/kg/dose q24h	10 mg/kg/dose q24h	10 mg/kg/dose q12h
- Severe infection/pneumonia	15 mg/kg/dose q12h	15 mg/kg/dose q12h	15 mg/kg/dose q18h	15 mg/kg/dose q24h	15 mg/kg/dose q24h	15 mg/kg/dose q12h
COLISTIN	2.5 mg/kg/dose q12h					
	2.5 mg/kg/dose q12h	1.25 mg/kg/dose q12	1.25 mg/kg/dose q12	1.5 mg/kg/dose q36h	1.5 mg/kg/dose q24-48h	2.5 mg/kg/dose q24-48h
DAPTOMYCIN (Cubicin [®]) ¹	6 - 10 mg/kg/dose q24					
	6 - 10 mg/kg/dose q24	6 - 10 mg/kg/dose q24	4 - 6 mg/kg/dose q24h	4 - 6 mg/kg/dose q48h	4 - 6 mg/kg/dose q48h after dialysis	8 mg/kg/dose q48h
FLUCONAZOLE (Diflucan [®])	Treatment Max Dose = 400mg/day (Candida non-albicans 800mg/day), Prophylaxis Max Dose = 400mg/day					
- Moderate infection, prophylaxis	6 mg/kg/dose q24h	3 mg/kg/dose q24h	3 mg/kg/dose q24h	3 mg/kg/dose q48h	3 mg/kg/dose q48h	6 mg/kg/dose q24h
- Severe infection	12 mg/kg/dose q24h	6 mg/kg/dose q24h	6 mg/kg/dose q24h	6 mg/kg/dose q48h	6 mg/kg/dose q48h	6-12 mg/kg/dose q24h
GANCICLOVIR (Cytovene [®])	See below					
	See below	See below	See below	See below	See below	See below
GENTAMICIN	See back of card					
	See back of card	See back of card	See back of card	See back of card	See back of card	See back of card
LEVOFLOXACIN (Levaquin [®])	Max Daily Dose = 750mg					
- < 5 years of age	10 mg/kg/dose q12h	10 mg/kg/dose q12h	10 mg/kg/dose q24h	10 mg/kg/dose q48h	10 mg/kg/dose q48h	10 mg/kg/dose q24h
- ≥ 5 years of age	10 mg/kg/dose q24h	10 mg/kg/dose q24h	10mg/kg/dose q24h	10 mg/kg/dose q48h	10 mg/kg/dose q48h	10 mg/kg/dose q24h
MEROPENEM (Merrem [®]) ¹	Max Daily Dose = 6g					
- Moderate - Severe Infection	20 mg/kg/dose q8h	20 mg/kg/dose q12h	10 mg/kg/dose q12h	10 mg/kg/dose q24h	10 mg/kg/dose q24h	20 mg/kg/dose q12h
- Meningitis/CF	40 mg/kg/dose q8h	40 mg/kg/dose q12h	20 mg/kg/dose q12h	20 mg/kg/dose q24h	20 mg/kg/dose q24h	40 mg/kg/dose q12h
PIPERACILLIN/TAZOBACTAM (Zosyn [®])	Dosing based on Piperacillin component. Max daily dose = 16g of Piperacillin (18g Piperacillin/Tazobactam)					
- Mild-moderate infection	80-100 mg/kg/dose q8h	50-75 mg/kg/dose q8h	50-75 mg/kg/dose q8h	50 mg/kg/dose q8h	50 mg/kg/dose q12h	50 mg/kg/dose q8h
- Severe infection	75-100 mg/kg/dose q6h	50-75 mg/kg/dose q6h	50-75 mg/kg/dose q8h	50-75 mg/kg/dose q8h	50-75 mg/kg/dose q12h	50-75 mg/kg/dose q8h
TMP/SMX (Bactrim [®])	Dosing based on TMP					
- Prophylaxis (PCP/PJP)	5 mg/kg/dose q24h or MWF	5 mg/kg/dose q24h or MWF	5 mg/kg/dose q24h or MWF	5 mg/kg/dose q24h or MWF	5 mg/kg/dose q24h or MWF	5 mg/kg/dose q24h or MWF
- Mild-moderate Infection	3-6 mg/kg/dose q12h	3-6 mg/kg/dose q12h	3-6 mg/kg/dose q12h	3-6 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q12h
- Severe infection, Meningitis, PCP/PJP	5 mg/kg/dose 6-8h	5 mg/kg/dose 8-12h	5 mg/kg/dose q8-12h	5 mg/kg/dose q24h	5 mg/kg/dose q24h	5 mg/kg/dose q8h
TOBRAMYCIN	See back of card					
	See back of card	See back of card	See back of card	See back of card	See back of card	See back of card
VALGANCICLOVIR (Valcyte [®])	See below					
	See below	See below	See below	See below	See below	See below
VANCOMYCIN (Vancocin [®])	See back of card					
	See back of card	See back of card	See back of card	See back of card	See back of card	See back of card

Foot Notes:

1. Restricted: Requires Pediatric ID approval (See section titled "Antimicrobials Requiring Approval" for full list)
2. CRRT = Continuous renal replacement therapy including CVVH: continuous venovenous hemofiltration; CVVHD: continuous venovenous hemodialysis; CVVHDF: continuous venovenous hemodiafiltration

FOSCARNET, GANCICLOVIR (IV) and VALGANCICLOVIR (PO)							
Indication	Estimated Creatinine Clearance (mL/min)					HD (Give After HD)	CRRT ²
	70 - < 90	50 - 69	25 - 49	10 - 24	< 10		
FOSCARNET	Normal Renal Function Dose: 90 mg/kg IV q12h						
	70 - 90 mg/kg/dose q12h	50 - 70 mg/kg/dose q12h	50 - 80 mg/kg/dose q24h	40 mg/kg/dose q24h	20 mg/kg/dose q24h	40 - 60 mg/kg/dose	60 mg/kg/dose q24 - q12h
GANCICLOVIR - IV	> 70						
	> 70	50 - 69	25 - 49	10 - 24	< 10	HD (Give After HD)	CRRT ²
- CMV induction/treatment	5 mg/kg/dose q12h	2.5 mg/kg/dose q12h	2.5 mg/kg/dose q24h	1.25 mg/kg/dose q24h	See HD dosing	1.25 mg/kg/dose 3 times per week following HD	CVVH: 2.5 mg/kg/dose q24h CVVHD/CVVHDE: 2.5 mg/kg/dose q12h
- CMV maintenance	5mg/kg q24h	2.5 mg/kg/dose q24h	1.25 mg/kg/dose q24h	0.625 mg/kg/dose q 24h	See HD dosing	0.625 mg/kg/dose 3 times per week following HD	CVVH: 1.25 mg/kg/dose q24h CVVHD/CVVHDE: 2.5 mg/kg/dose q24h
VALGANCICLOVIR - PO	≥ 60						
	≥ 60	40-59	25-39	10-24	<10	HD (Give After HD)	CRRT ²
- CMV induction	15mg/kg/dose q12h (max 900mg/dose)	7.5mg/kg/dose q12h (max 450mg/dose)	7.5mg/kg/dose q24h (max 450mg/dose)	7.5mg/kg/dose q48h (max 450mg/dose)	Use not recommended, consider ganciclovir	Use not recommended, consider ganciclovir	Use not recommended, consider ganciclovir
- CMV maintenance	15mg/kg/dose q24h (max 900mg/dose)	7.5mg/kg/dose q24h (max 450mg/dose)	7.5mg/kg/dose q48h (max 450mg/dose)	7.5mg/kg/dose twice a week (maximum 450mg/dose)	Use not recommended, consider ganciclovir	Use not recommended, consider ganciclovir	Use not recommended, consider ganciclovir



Pediatric Antimicrobial Renal Dosing Guidelines

Vancomycin					
Indication	Estimated Creatinine Clearance (mL/min)				
	>50	30-50	10-29	<10 and Hemodialysis	CRRT ²
FT Neonate- 1 month of age					
Usual Dosage	15 mg/kg/dose q8h	15 mg/kg/dose q12h	15 mg/kg/dose q24h	15 mg/kg/dose X 1 & adjust based on random levels	15 mg/kg/dose q 12h
Serious infections	20 mg/kg/dose q8h	20 mg/kg/dose q12h	20 mg/kg/dose q24h	20 mg/kg/dose X 1 & adjust based on random levels	20 mg/kg/dose q 12h
Infants > 44 weeks PCA and children					
Usual dosage	15 mg/kg/dose q6h	15 mg/kg/dose q8 - 12h	15 mg/kg/dose q12- 24h	15 mg/kg/dose X 1 & adjust based on random levels	15 mg/kg/dose q 12h
Serious infections	20 mg/kg/dose q6h	20 mg/kg/dose q8 - 12h	20 mg/kg/dose q12- 24h	20 mg/kg/dose X 1 & adjust based on random levels	20 mg/kg/dose q 8 - 12h
Adolescents (13 -18 years of age)					
Usual dosage	15 mg/kg/dose q8h	15 mg/kg/dose q12h	15 mg/kg/dose q24h	15 mg/kg/dose X 1 & adjust based on random levels	15 mg/kg/dose q 12h
Serious infections	15 mg/kg/dose q6h	15 mg/kg/dose q8- 12h	15 mg/kg/dose q12- 24h	15 mg/kg/dose X 1 & adjust based on random levels	15 mg/kg/dose q 8-12h

1. Serious infections: pneumonia, meningitis, osteomyelitis, endocarditis, MRSA bacteremia

**When dosing Aminoglycosides: If patient is not obese, use TOTAL BODY WEIGHT
If obese (>120% of Ideal Body Weight), use ADJUSTED BODY WEIGHT = [(TBW-IBW) x 0.4] + IBW**

AMINOGLYCOSIDES: Neonatal Dosing for Tobramycin and Gentamicin			
Dose	Trough Goal: < 1 mcg/mL		
3.5 mg/kg/dose	<1.2 kg	q48h	
	>1.2 kg and < Full Term	q36h	
	Full Term	q24h	

AMINOGLYCOSIDES: Pediatric Extended-Interval Dosing			
Indication	Age	Gentamicin/Tobramycin Dosing	Amikacin Dosing
UTI	1 month-17 years	5mg/kg IV q24	15mg/kg IV q24h
Other infections	1 month – 7 yrs	8 mg/kg IV Q24h	15-20 mg/kg IV Q24h
	8 yrs – 17 yrs	7 mg/kg IV Q24h	15 mg/kg IV Q24h
Cystic Fibrosis; extended interval preferred	All	10 mg/kg IV Q24h	30 mg/kg IV Q24h

- If anticipated duration > 72 hrs, measure a level 4 hrs before second dose
 - Target gentamicin/tobramycin serum level: <1 mcg/ml for the last 4 hrs of the dosing interval
 - Target amikacin serum level: <2 mcg/ml for the last 4 hrs of the dosing interval

AMINOGLYCOSIDES: Pediatric Conventional Dosing							
Drug	Dose	Dosing Interval Based on CrCl (ml/min)					CRRT ²
		≥50	30-50	10-29	<10	HD	
Gentamicin/ Tobramycin	2.5 mg/kg	q8h	Q12-18h	Q18-24h	q48-72h	2 mg/kg/dose; redose as indicated by serum concentrations	2 - 2.5 mg/kg/dose q12h, monitor serum concentrations
	≥ 13yo: 2 mg/kg						
Amikacin	5-7.5 mg/kg	q8h	Q12-18h	Q18-24h	Q48-72h	5 mg/kg/dose; redose as indicated by serum concentration	5 - 7.5 mg/kg/dose q12h, monitor serum concentrations
	≥ 13yo: 5 mg/kg						

AMINOGLYCOSIDES: Conventional Dosing Target Levels				
Indication	Gentamicin and Tobramycin		Amikacin	
	Peak (mcg/mL)	Trough (mcg/mL)	Peak (mcg/mL)	Trough (mcg/mL)
Gram Negative Infections	6-10	≤1	20-30	≤4
UTI	4-6	≤1	15-20	≤4
Gram Positive Synergy	3-5	≤1	N/A	N/A
Cystic Fibrosis	10-12	≤1	30-40	≤4

Antimicrobials Requiring Approval		
Amphotericin B Liposomal (Ambisome®) – Non-formulary	Ertapenem (Invanz®): Not restricted for: CAIA, peri-rectal abscess, prophylaxis in colorectal surgery	Oritavancin (Orbactiv®)- Non-formulary
Aztreonam (Azactam®)	Fidaxomicin (Dificid®)	Posaconazole (Noxafil®)
Ceftazidime (Fortaz®) - Non-formulary	Imipenem/cilistatin (Primaxin®): Not restricted for empiric use in PICU/NICU	Quinopristin/Dalfopristin (Synercid®)
Ceftazidime/avibactam (Avycaz®) - Non-formulary	Isavuconazonium Sulfate (Cresemba®) - Non-formulary	Telavancin (Vibativ®)- Non-formulary
Ceftolozane/tazobactam (Zerbaxa®) - Non-formulary	Linezolid (Zyvox®)	Tigecycline (Tygacil®)- Non-formulary
Colistimethate IV (Colistin®): Not restricted for empiric use in PICU/NICU	Meropenem (Merrem®)*: Not restricted for empiric use in PICU/NICU	Voriconazole (Vfend®): Not restricted for BMT antifungal prophylaxis per protocol
Dalbavancin (Dalvance®)	Micafungin (Mycamine®): Not restricted for BMT antifungal prophylaxis per protocol	
Daptomycin (Cubicin®)	Nitazoxanide (Alinia®)- Non-formulary	

Contact Numbers	
For Approvals Contact Pediatric ID Monday-Friday (7:00-17:00): Pager (305 -750-0716 Monday - Friday 17:00-23:00, holidays and weekends → Please consult call schedule. On call pager varies depending on schedule.	Pediatric Pharmacy: (305) 585-5697 NICU Pharmacy: (305) 585-5142