

Intravenous Vancomycin Empiric Dosing

- **Indication:** Suspected or documented infections caused by susceptible gram-positive organisms
- **Do not delay antibiotics when they are needed.** Consult Pharmacist for assistance on subsequent doses.
- **Empiric dosing: 1000 mg q12h**
 - Clearance is affected by age, sex, body weight, renal function and concomitant nephrotoxic drugs
- **Exceptions (maximum 2000 mg per dose, and round off to nearest 250 mg)**
 - Sepsis: 15 mg/kg q12h
 - Central nervous systems, e.g. bacterial meningitis: loading dose 25 mg/kg, then 15 mg/kg q12h
 - Infective endocarditis: 15 mg/kg q12h
 - Under 50 kg: 15 mg/kg per dose
 - Over 100 kg: 15 mg/kg by dosing-weight (adjusted to height and weight). If information for calculating dosing-weight is not available, give first dose based on actual weight and adjust subsequent doses.
- **Dosing intervals below are guidance only and assume relatively stable renal function. Use clinical judgement and account for patient's clinical status and severity of infection, especially if estimation of renal function straddles two interval categories.**

- If e-GFR or CrCL are available, select empiric interval accordingly[§]:

CrCL (mL/min) or eGFR (mL/min/1.73m ²)	Suggested <u>empiric</u> initial dosing interval
Greater than or = 60	q12h
30-59	q24h
Less than 30	q48h, guided by indication and follow-up monitoring

[§]**NOTE:** MDRD is a more accurate measure of kidney function than CrCL, but the difference in GFR estimates based on the MDRD and CrCL will not lead to a difference in drug dosages for the majority of patients. Recommendations from US National Kidney Disease Education Program suggest that either equation can be used for drug dosing purposes.

- Select empiric interval based on age and serum creatinine (SCr) **only when eGFR (based on MDRD or CKD-Epi), or CrCL are not readily available in electronic health record,:**

SCr (μmol/L)	Age group (years)								
	Under 40	40-49	50-59	60-69*	70 and older*				
40-60	q12h	q12h	q12h	q12h	q24h				
61-80			q24h	q24h					
81-100		q24h							
101-120									
Over 120									

- **For patients on renal replacement therapy:**
 - Intermittent hemodialysis (administer on dialysis days)
 - Less than 70 kg: 1000 mg loading dose, then 500 mg post hemodialysis
 - 70-100 kg: 1250 mg loading dose, then 750 mg post hemodialysis
 - Higher than 100 kg: 1500 mg loading dose, then 1000 mg post hemodialysis
 - Slow low efficiency dialysis (SLED) under 12h in duration: 1000 mg Q24H, administer post-SLED
 - Peritoneal dialysis: 1000 mg IV if less than 50 kg; 2000 mg IV if 50 kg or more, subsequent doses based on levels every 7 days
 - Continuous renal replacement therapy: 1250 mg IV Q24H
- **For guidance on monitoring, see Clinical Summary for Vancomycin Monitoring**

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References

- Vancouver General Hospital Vancomycin Dosing Card 2nd edition (July 2015)
- Wong-Beringer A, Joo J, Tse E, Beringer P. Vancomycin-associated nephrotoxicity: a critical appraisal of risk with high-dose therapy. *Int J Antimicrob Agent* 2011;37:95-101.
- Van Hal SJ, Patterson DL, Lodise TP. Systematic Review and Meta-Analysis of Vancomycin-Induced Nephrotoxicity Associated with Dosing Schedules That Maintain Troughs between 15 and 20 Milligrams per Liter *Antimicrob Agent Chemother* 2013;57:734-744.
- National Kidney Foundation. Frequently Asked Questions About GFR Estimates. Available at <https://www.kidney.org/professionals/KDOQI/gfr> (accessed May 24, 2018).