

# PHARMACY

## VANCOMYCIN EMPIRIC DOSING GUIDELINES

### February 2023, 5<sup>th</sup> edition

For more information, please contact Pharmacy  
or visit: [www.vhpharmsci.com](http://www.vhpharmsci.com)

#### KEY

1. Establish patient age, weight, and serum creatinine.
2. Consider loading doses only for critically ill.
3. Using Table 1, identify initial loading dose (if needed) and maintenance dose per interval according to patient weight.
4. Using Table 3, identify initial dosing interval, by age and serum creatinine.
5. Using Table 4, determine dialysis dosing.

**TABLE 1. INITIAL DOSE PER INTERVAL**

TOTAL BODY WEIGHT (in kg)	LOADING DOSE [FOR CRITICALLY ILL] <sup>α</sup> (maximum dose 3000 mg)	MAINTENANCE DOSE <sup>β</sup> (15 mg/kg)
	Target pre-level 10-15 mg/L (20 mg/kg)	
40-50	1000 mg	750 mg
51-60	1250 mg	1000 mg
61-70	1250 mg	1000 mg
71-80	1500 mg	1250 mg
81-90	1750 mg	1250 mg
91-100	2000 mg	1500 mg

<sup>α</sup> Higher loading doses may be considered. Consult Pharmacy.

<sup>β</sup> Suggested maximum maintenance dose is 4.5 g per day.

If loading dose used, give maintenance dose at next dosing interval (See Table 3)

**TABLE 2. TARGET PRE-VANCOMYCIN LEVEL BASED ON INDICATION**

Pre-vancomycin Level 10-15 mg/L	
<ul style="list-style-type: none"> <li>• Skin and soft tissue infection</li> <li>• Urinary tract infection (UTI) (if catheter-associated; rule out bacteremia)</li> <li>• Catheter-associated bacteremia</li> <li>• Central nervous system infection</li> </ul>	<ul style="list-style-type: none"> <li>• Deep-seated or sequestered infection (e.g. abscess)</li> <li>• Endocarditis</li> <li>• Osteomyelitis</li> <li>• MRSA bacteremia or pneumonia</li> <li>• MSSA bacteremia (penicillin allergic patient)</li> </ul>

**TABLE 3, FOR ALL INDICATIONS TARGET TROUGH 10-15 mg/L**  
**INITIAL DOSING INTERVAL (hours)**

SCr (µmol/L)	Age Group (years)					
	20-29	30-39	40-49	50-59	60-69^	70-79^
40-60	8	8	12	12	12	18
61-80	8	12	12	12	18	18
81-100	12	12	12	18	18	18
101-120	12	12	18	18	18	24
121-140	12	18	18	18	24	
141-160	18	24	24	24		
161-180	24	24				
181-200	24					
Above 200						
Dialysis	See TABLE 4 (back of card)					

^In elderly patients with low muscle mass, use clinical judgment as SCr may not reflect renal function accurately

**Shaded boxes:** These patients have unstable and/or reduced renal function, and the nomogram may not be as predictive.

- For those with no dosing interval stated, patients should receive a dose followed by 3 hour and 24 hour post-dose serum levels to determine subsequent dosing.
- A clinical pharmacist should be contacted for assistance with dosing and interpretation of levels.

**TABLE 4 DIALYSIS DOSING**

	Hemodialysis (HD)	Continuous Ambulatory Peritoneal Dialysis (CAPD)
<b>Loading Dose</b>	25 mg/kg	Intraperitoneal (IP): 30 mg/kg <b>OR</b> Intravenous (IV): 20 mg/kg
<b>Maintenance Dose</b>	<b>weight &lt; 70 kg:</b> 500 mg QHD <b>weight ≥ 70 kg:</b> 750 mg QHD	IP: 30 mg/kg every 5-7 days <b>OR</b> IV: 20 mg/kg every 4-7 days
<b>When To Draw Level</b>	Pre-second maintenance dose	3-4 days after first dose
<b>Target Vancomycin Level</b>	Pre-HD level: 10-20 mg/L	Trough level: 10-20 mg/L

## THERAPEUTIC DRUG MONITORING

Vancomycin serum levels should be ordered prior to the 3<sup>rd</sup> or 4<sup>th</sup> dose in the following situations:

1. Vancomycin treatment is anticipated for greater than 7 days and ongoing therapeutic drug monitoring is indicated (e.g. MRSA, bacteremia, infective endocarditis, osteomyelitis, septic arthritis)
2. Vancomycin treatment is greater than 72 hours **WITH** one or more of the following:
  - Receiving aggressive dosing (where target trough level is 15 mg/L)
  - Renal function unstable, serum creatinine increased by 30 µmol/L or 1.5 times from baseline
  - On dialysis (hemodialysis or peritoneal – see Table 4)
  - Receiving concurrent nephrotoxic or ototoxic drug
  - Altered volume of distribution or clearance, including:
    - Age 65 years or greater
    - Hypermetabolic (e.g. burn patient, cystic fibrosis)
    - Low body weight/muscle mass or frail
    - Obese (125% of ideal body weight or greater)
    - Patient not responding to therapy

Pre- and 3 hour post-vancomycin levels (target post-level of 20-40 mg/L) if calculation of precise kinetic parameters are necessary (e.g. in cases when target pre-vancomycin level of 10-15 mg/L cannot be achieved while on prolonged therapy, or in an obese, pregnant or pediatric patient, especially when aggressive dosing is required). Target AUC<sub>24</sub> is 400-600 mg·h/L