VANCOMYCIN EMPIRIC DOSING GUIDELINES (rev. March 2016)

KEY

1. Establish patient age, weight, and serum creatinine.
2. Using Table 1, identify initial loading dose and maintenance dose per interval according to patient weight and target pre-vancomycin level.
3. Using Table 2, determine the target pre-vancomycin level based on clinical indication
4. Using Tables 3 or 4, identify initial dosing interval according to target pre-vancomycin level, age and serum creatinine.
5. Using Table 4, determine dialysis dosing.

TABLE 1 INITIAL DOSE PER INTERVAL

TOTAL BODY WEIGHT	LOADING DOSE (Maximum 2500 mg/dose)		MAINTENANCE DOSE
kg	Target pre-level 10-15 mg/L (20 mg/kg)	Target pre-level 15-20 mg/L (25 mg/kg)	(15mg/kg)
40-50	1000 mg	1250 mg	750 mg
51-60	1250 mg	1500 mg	1000 mg
61-70	1250 mg	1750 mg	1000 mg
71-80	1500 mg	2000 mg	1250 mg
81-90	1750 mg	2250 mg	1250 mg
91-100	2000 mg	2500 mg	1500 mg

Table 2 SUGGESTED TARGET PRE-VANCOMYCIN LEVELS BASED ON INDICATION

Vancomycin Pre-Level 10-15 mg/L	Vancomycin Pre-Level 15-20 mg/L
• Skin and soft tissue infection • Urinary tract infection (if catheter-associated; rule out bacteremia)	• Catheter-associated bacteremia • Central nervous system infection • Deep-seated or sequestered infection (e.g. abscess) • Endocarditis • Osteomyelitis • MRSA bacteremia or pneumonia • MSSA bacteremia (penicillin allergic patient)

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TABLE 3 FOR SKIN AND SOFT TISSUE INFECTIONS AND UTI
LOW-TARGET 10-15 mg/L INITIAL DOSING INTERVAL (hours)

Serum Cr (mcmol/L)	Age Group (years)					
	20-29	30-39	40-49	50-59	60-69[a]	70-79[a]
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 5					

TABLE 4 FOR ALL OTHER INDICATIONS (COMPLICATED INFECTIONS)
HIGH-TARGET 15-20 mg/L INITIAL DOSING INTERVAL (hours)

Serum Cr (mcmol/L)	Age Group (years)						
	20-29	30-39	40-49	50-59	60-69[a]	70-79[a]	80-89[a]
40-60	6	6-8	8	8	8-12[b]	12	12
61-80	8	8	8-12[b]	12	12	12	12-18[b]
81-100	12	12	12	12	12-18[b]	18	18
101-120	12	12	12-18[b]	18	18	18	18
121-140	12	18	18	18	18	18-24[b]	
141-160	18	18	18	18-24[b]	24		
161-180	18-24[b]	24	24	24			
Above 180							
Dialysis	See Table 5						

[a] In elderly patients with low muscle mass, use clinical judgement as SCr may not reflect renal function accurately
[b] If more aggressive therapy is desired, select the more frequent dosing interval

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

- For those with an interval stated, patients should receive a loading dose followed by 3 hour and pre-2nd dose serum levels to determine appropriate dosing.
- For those with no dosing interval stated, patients should receive a loading 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.

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TABLE 5. DIALYSIS DOSING

	Hemodialysis (HD)	**Continuous Ambulatory Peritoneal Dialysis (CAPD)**
Loading Dose	25 mg/kg	Intraperitoneal (IP): 30 mg/kg Intravenous (IV): 20 mg/kg
Maintenance Dose	**weight < 70 kg**: 500 mg QHD **weight ≥ 70 kg:** 750 mg QHD	IP: 30 mg/kg every 5-7 days IV: 20 mg/kg every 4-7 days
When To Draw Level	Pre-second maintenance dose	3-4 days after first dose
Target Vancomycin Level	Pre-HD level:15-20 mg/L	Trough level 15 -20 mg/L

THERAPEUTIC DRUG MONITORING

Vancomycin serum levels should be ordered in the following situations:

1) Pre-vancomycin level on 3rd or 4th dose (within 48 hours) if
   - a higher level of 15-20 mg/L is desired **OR**
   - patient is at risk for accumulation (e.g. Q6-8H interval) **OR**
   - patient is receiving other nephrotoxic agents **OR**
   - serum creatinine is above normal, renal function is changing or uncertain **OR**
   - patient is obese (> 125% IBW), pregnant, pediatric or hypermetabolic (e.g. burn patient, cystic fibrosis)

   Repeat at least weekly to ensure pre-level is within desired therapeutic range

2) Pre-vancomycin level after 7 days of therapy (for prolonged course) if aiming for levels < 15 mg/L **AND** no other risk factors as per above

3) Pre-vancomycin level if patient is not responding to therapy

4) Pre- and 3 hour post-vancomycin level (target 20-40 mg/L) if calculation of precise kinetic parameters are necessary (e.g. in a case when a target pre-level of 15-20 mg/L cannot be achieved while on prolonged therapy, or in an obese, pregnant or pediatric patient, especially when aggressive dosing is required).