VANCOMYCIN EMPIRIC DOSING GUIDELINES

KEY

1. Establish patient age, weight, and serum creatinine.

2. Using Table 1, determine Target Pre-Vancomycin Level based on clinical indication.

Table 1. SUGGESTED TARGET PRE-VANCOMYCIN LEVELS BASED ON INDICATION		
LOW TARGET 10 to 15 mg/L	**HIGH TARGET 15 to 20 mg/L**	
Skin and soft tissue infection	Catheter-associated bacteremia	Endocarditis
Urinary tract infection (if catheter-associated, rule out bacteremia)	Central nervous system infection	Osteomyelitis
	Deep-seated or sequestered infection (e.g. abscess)	MRSA bacteremia or pneumonia
		MSSA bacteremia (penicillin-allergic patient)

3. Order LOADING DOSE depending on Target Pre-Vancomycin Level using Cerner dose-calculator.

4. Using Table 2 or 3, identify initial dosing interval according to Target Pre-Vancomycin Level, age and serum
   Order MAINTENANCE DOSE of 15 mg/kg using Cerner dose-calculator.

Table 2.
FOR SKIN AND SOFT TISSUE INFECTION & UTI
LOW-TARGET 10-15 mg/L INITIAL DOSING INTERVAL (hours)

	LOW-TARGET 10 to 15 mg/L					
SCr (µmol/L)	Age group (years)					
	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69^	70 to 79^
40 to 60	8	8	12	12	12	18
61 to 80	8	12	12	12	18	18
81 to 100	12	12	12	18	18	18
101 to 120	12	12	18	18	18	24
121 to 140	12	18	18	18	24	
141 to 160	18	24	24	24		
161 to 180	24	24				
181 to 200	24					

Table 3.
FOR ALL OTHER INDICATIONS (COMPLICATED INFECTIONS)
HIGH-TARGET 15-20 mg/L INITIAL DOSING INTERVAL (hours)

HIGH-TARGET 15 to 20 mg/L						
Age group (years)						
20 to 29	30 to 39	40 to 49	50 to 59	60 to 69^	70 to 79^	80 to 89^
6	6 to 8	8	8	8 to 12*	12	12
8	8	8 to 12*	12	12	12	12 to 18*
12	12	12	12	12 to 18*	18	18
12	12	12 to 18*	18	18	18	18
12	18	18	18	18	18 to 24*	
18	18	18	18 to 24*	24		
18 to 24*	24	24	24			

* If more aggressive therapy is desired, select more frequent dosing interval
^ 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 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 postdose serum levels to determine subsequent dosing.
- A clinical pharmacist should be contacted for assistance with dosing and interpretation of levels.

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-vancomycin 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-vancomycin 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)