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VANCOMYCIN NOMOGRAM FOR ADULT PATIENTS:
GOAL AUC_{24} 400-600

Loading dose (LD): Consider loading dose in morbidly obese patients >125 kg that have stable renal function with clearance above 30 ml/min. Consider loading in patients with documented severe or complicated MRSA infections. **Initiation of maintenance dose should begin at next dosing interval.**

- 50-64 kg: 1,250 mg x1, then maintenance schedule as provided below.
- 65-79 kg: 1,500 mg x1, then maintenance schedule as provided below.
- 80-99 kg: 1,750 mg x1, then maintenance schedule as provided below.
- ≥100 kg: 2,000 mg x1, then maintenance schedule as provided below.

Maintenance dose (MD): Based on estimated creatinine clearance and actual body weight.

	<25, AKI, PD (mL/min)	25-34 (mL/min)	35-44 (mL/min)	45-54 (mL/min)	55-64 (mL/min)	65-74 (mL/min)	75-84 (mL/min)	85-94 (mL/min)	>95 (mL/min)
50 kg	10-15 mg/kg x1 dose (rounded to nearest 250 mg, max dose of 1500 mg) See below for dosing frequency and monitoring *	500 q24	500 q24	750 q24	750 q24	1000 q24	750 q12	750 q12	750 q12
55 kg		500 q24	750 q24	750 q24	1000 q24	1000 q24	750 q12	750 q12	750 q8
60 kg		750 q24	750 q24	750 q24	1000 q24	750 q12	750 q12	750 q12	750 q8
65 kg		750 q24	750 q24	1000 q24	750 q12	750 q12	1000 q12	750 q8	750 q8
70 kg		1000 q24	1000 q24	1000 q24	750 q12	1000 q12	1000 q12	750 q8	750 q8
75 kg		1000 q24	1000 q24	1000 q24	750 q12	1000 q12	1000 q12	1000 q12	750 q8
80 kg		1000 q24	1000 q24	1000 q24	1000 q12	1000 q12	1000 q12	1000 q12	1000 q8
85 kg		1000 q24	1000 q24	1000 q24	1000 q12	1000 q12	1000 q12	1000 q12	1000 q8
90 kg		1000 q24	1000 q24	1250 q24	1000 q12	1000 q12	1000 q12	1000 q8	1000 q8
95 kg		1000 q24	1000 q24	1250 q24	1000 q12	1000 q12	1000 q12	1000 q8	1000 q8
100 kg		1000 q24	1250 q24	1250 q24	1000 q12	1250 q12	1250 q12	1000 q8	1000 q8
105 kg		1250 q24	1250 q24	1250 q24	1000 q12	1250 q12	1250 q12	1000 q8	1000 q8
110 kg		1250 q24	1250 q24	1000 q12	1000 q12	1250 q12	1250 q12	1000 q8	1250 q8
115 kg		1250 q24	1250 q24	1000 q12	1000 q12	1250 q12	1000 q8	1000 q8	1250 q8
120 kg		1250 q24	1250 q24	1250 q12	1250 q12	1250 q12	1000 q8	1000 q8	1250 q8
≥125 kg		1250 q24	1250 q24	1250 q12	1250 q12	1250 q12	1000 q8	1000 q8	1250 q8

*** IHD:** administer 10-15 mg/kg (max: 1500 mg) after each HD session
***CRRT:** administer 10-15 mg/kg (max: 1500 mg) every 24 hours

Initiating Vancomycin Therapy

1. If patient recently received vancomycin, review the previous regimen and patient information when determining an appropriate current regimen. Consider rounding the nomogram dose up or down based on patient specific factors that have significant impact on vancomycin distribution or clearance (e.g., pregnancy, severe trauma, ascites, extensive fluid boluses, etc.). Please reduce total daily vancomycin dose by approximately 30% when treating patients with uncompensated cirrhosis.

Monitoring within 72 hours of starting vancomycin:

1. Vancomycin levels should be unnecessary if therapy not anticipated to exceed 72 hours.
2. Do not check vancomycin concentrations within the first 72 hours except in the following situations:

Clinical Situation	Monitoring Recommendation
Approximately 90% of patients will have vancomycin discontinued within 48-72 hours and most patients do not require levels	
Documented gram positive infection requiring vancomycin	• Obtain 2 vancomycin levels at steady state (e.g., around 4th dose) and calculate AUC, and adjust dose to achieve goal AUC of 400-600 • Avoid obtaining vanco level during infusion or within 1 hour after completion of infusion •
Septic shock or ECCMO	
Weight >150 kg	
Significant acute changes in renal function, AKI, or CrCl <25 mL/min.	• Obtain a vancomycin level and dose per level • Monitor random levels in patients and re-dose when level <15 mcg/mL

3. AUC is the preferred method of vancomycin monitoring. Trough-based monitoring should not be routinely used. Goal AUC is 400-600 regardless of MIC and should not be adjusted for MICs less than or equal to 1.

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Monitoring after 72 hours of starting vancomycin:

1. Use the following table to guide monitoring of vancomycin based on the patient's clinical status:

Clinical Situation	Monitoring Recommendation
Patients with stable renal function (including patients with CKD and receiving CRRT)	• Obtain 2 vancomycin levels at steady state and calculate AUC to achieve goal AUC of 400-600 • Avoid obtaining vanco level during infusion or within 1 hour after completion of infusion • Document individualized trough range that corresponds to AUC of 400-600 for that patient
Patients on conventional dialysis	• Check pre-HD level (preferred for floor patients) or 3-hr post-HD level (preferred for ICU patients) • Target pre-HD levels of 15-20 mcg/mL, or post-HD level of 10-15 mcg/mL
Patients on peritoneal dialysis	• Obtained random level 3-5 days after vancomycin administration • Target level of 10-15 mcg/mL, and re-dose as necessary
Patients who have fluctuating fluid and/or renal status	• Use clinical judgement to determine monitoring strategy • It is reasonable to perform AUC or trough based monitoring. However, the instability of renal clearance or volume of distribution should be taken into account when evaluating levels and subsequent dosing.
Patient on IV vancomycin for post-operative prophylaxis	• Target trough goal of 10-15 mcg/mL

2. Consider ID consult in patients with confirmed MRSA infection who do not improve on vancomycin. ID consult should be ordered for all patients with MRSA bacteremia.
3. Refer to the following table for recommendations on frequency of ordering vancomycin levels and serum creatinine:

Clinical Situation	Monitoring Recommendation
Subsequent levels should be drawn every 2-7 days, and serum creatinine should be monitored at least every 48 hours during entire course of vancomycin therapy. Avoid evening and overnight levels if clinically stable	
Patients with changing fluid status or renal function	• Obtain levels every 2-3 days • Monitor 2 vancomycin levels to facilitate AUC calculation, when possible • In patients receiving one-time doses (i.e., dosing by level), monitor random levels and re-dose when level <15 mcg/mL
Patients with stable fluid status and renal function requiring long-term therapy	• Obtain levels every 5-7 days, after initial level(s) are therapeutic • Once a patient is on a stable dose with an AUC between 400 and 600, monitoring of vancomycin troughs may be acceptable in patients with stable fluid status and renal function

4. Vancomycin infusion realated reactions are the most common vancomycin adverse effects, characterized by flushing, redness of the trunk and itching during or shortly after the infusion. Treatment should include prolonging the infusion time (to 3-4 hours). Could also consider diphenhydramine.

Michigan Medicine AUC Calculator:

https://www.med.umich.edu/asp/misc/UMich_PK_Calculator.xlsx

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Revision History:
03/21: Adjusted loading dose recommendations, added comment on cirrhosis, added post-operative prophylaxis goals
11/21: Adjusted level timing recommendations
02/24: Updated to Vancomycin Infusion Related Reactions