

Louth: Antimicrobial Guidelines - Louth Hospitals: Antimicrobial Guidelines: Adult Vancomycin Guideline

[Vancomycin Calculator](#)

Do NOT use in ICU/ HDU to calculate Dosing for Vancomycin Continuous Infusion

[KDIGO AKI Definition](#)

[Assessing Renal Function](#)

LH Adult Vancomycin Dosing Guideline V.6, 2024

1. Select patient appropriately

- Vancomycin is associated with renal and ototoxicity. There is an increased risk of nephrotoxicity when co-prescribed with other nephrotoxic medications. Monitoring of serum levels is a necessity.
- If administered too quickly, vancomycin can induce a large histamine release which manifests as 'Red-Man Syndrome'. Give at a rate not greater than 10mg/min.

2. Use Vancomycin Calculator on LH Antimicrobial Guidelines App to calculate dose based on renal function and weight

- N.B. CrCl is NOT accurate in AKI, consider full clinical picture, see dose recommendations for AKI as well as CKD below**
- Use actual weight to calculate dose for all patients even if BMI $\geq 30\text{kg/m}^2$ - vancomycin calculator will do this automatically
- Prescribe **ACTUAL DOSE** (not mg/kg) - round dose to the nearest 50mg

LOADING DOSE: 25mg/kg STAT, maximum loading dose 3g (if pregnant, max 2g)

- Loading dose is recommended for all patients including those with renal impairment
- Give loading dose when prescribed, adjust times of subsequent maintenance doses as outlined below

MAINTENANCE DOSE: SEE TABLE BELOW (maximum maintenance dose 2g)

Normal Renal Function or CKD	AKI (KDIGO)	Initial Maintenance Dose Regimen
CrCl $\geq 50\text{mL/min}$	AKI Stage 1	15mg/kg BD, starting approx. 12 hours after loading dose [Adjust dose times to 10am and 10pm]
CrCl 20–50 mL/min	AKI Stage 2	15mg/kg once daily, starting approx. 24 hours after loading dose [Adjust dose time to 10am]
CrCl < 20 mL/min	AKI Stage 3	Check trough level daily and wait for result. Re-dose with 15mg/kg when trough < 20mg/L and adjust further doses based on trough results. [Adjust dose time to 10am]
Dialysis	Dialysis	Contact clinical microbiologist or pharmacist for dosing advice.

3. Check urea and creatinine daily / alternate days as indicated

4. Check first trough level as outlined below (within 1 hour before dose given)

- BD/TDS dosing: Pre 4th / 5th dose (whichever is the morning dose)
- Once daily dosing: Pre 3rd dose
- CrCl < 20 mL/min: Daily trough level check

Note - Vancomycin levels are processed in Biochemistry Lab from 8am to 8pm Mon – Fri and 9am to 5pm Sat – Sun. Consultant request only outside of these hours.

5. PROCEED with due dose of vancomycin WITHOUT waiting for trough level result unless new or worsening AKI or CrCl < 20 mL/min

- When the trough level result is available, the next dose can be adjusted or held if needed.

6. Check trough level result when available: Target 15 – 20 mg/L for all patients

Trough Level	Suggested Dose and Frequency Alteration
<10 mg/L	Increase frequency from BD to TDS or from once daily to BD as applicable (keep same dose each time).
10-15 mg/L	Calculate total daily dose and divide into more frequent doses, e.g. switch 1.5g BD to 1g TDS (preferred) OR increase each dose by 250mg.
15-20 mg/L	Maintain current dosing regimen.
20-25 mg/L	DO NOT HOLD ANY DOSES. Give lower dose at same frequency, i.e. reduce each dose by 250mg. Repeat trough level as per box number 4 above.
>25 mg/L	HOLD vancomycin dose(s). Usually HOLD until level repeated next morning and result obtained. When level < 20mg/L, restart with lower dose at same frequency, i.e. reduce each dose by 500mg. N.B. If patient has required a high dose to reach therapeutic level (e.g. $\geq 4\text{g/day}$), they are likely to clear vancomycin quickly and it may be appropriate to hold a single dose only. Contact pharmacist for advice if needed.

7. Repeat trough level when clinically indicated

- After dose adjustments, repeat trough level as per box number 4 above
- If renal function normal and stable and trough level in range, repeat trough level twice weekly
- If renal function abnormal or unstable, repeat trough level more frequently (for example, daily or on alternate days)

Approved by LH Drugs and Therapeutics Committee