

# The Ultimate List of Vancomycin AUC Resources & Literature

This AUC-focused vancomycin literature review summarizes research evaluating AUC-based dosing strategies shown to enhance patient outcomes, reduce adverse drug events and lower healthcare costs. It is intended to serve as a reference point for pharmacists looking for trustworthy and credible literature on this topic.

**Therapeutic monitoring of vancomycin for serious methicillin-resistant *Staphylococcus aureus* infections:** A revised consensus guideline and review by the American Society of Health-System Pharmacists, the Infectious Diseases Society of America, the Pediatric Infectious Diseases Society, and the Society of Infectious Diseases Pharmacists  
Published 19 March 2020 [Download Paper](#)

## Clinical Effectiveness of AUC Vancomycin Dosing

Research articles regarding enhanced outcomes associated with AUC-based monitoring of vancomycin.

**DoseMeRx increases the proportion of vancomycin patients achieving target AUC24 and the percentage in target therapeutic range**  
Authors: Luqman Vali, David R Jenkins, Rakesh Vaja, Hussain Mulla | [Download Paper](#)

**Impact of source of infection and vancomycin AUC0-24/MICBMD targets on treatment failure in patients with methicillin-resistant *Staphylococcus aureus* bacteraemia.**  
Authors: Ghosh N, Chavada R, Maley M, van Hal SJ.  
[Download Paper](#)

**Are vancomycin trough concentrations adequate for optimal dosing?**  
Authors: Neely MN, Youn G, Jones B, et al.  
[Download Paper](#)

**DoseMeRx (Bayesian estimation) accurately identifies patients at risk of AKI from just one assay**

Authors: Chavada R, Ghosh N, Sandaradura I, Maley M, Van Hal SJ. | [Download Paper](#)

**Are vancomycin trough concentrations of 15 to 20 mg/L associated with increased attainment of an AUC/MIC  $\geq$  400 in patients with presumed MRSA infection?**

Authors: Hale CM, Seabury RW, Steele JM, Darko W, Miller CD. | [Download Paper](#)

**Association between the AUC0-24/MIC ratio of vancomycin and its clinical effectiveness: a systematic review and meta-analysis.**

Authors: Men P, Li HB, Zhai SD, Zhao RS.  
[Download Paper](#)

**Pharmacodynamics of vancomycin and other antimicrobials in patients with *Staphylococcus aureus* lower respiratory tract infections.**

Authors: Moise-Broder PA, Forrest A, Birmingham MC, Schentag JJ. | [Download Paper](#)

**Examining the relationship between vancomycin area under the concentration time curve and serum trough levels in adults with presumed or documented *Staphylococcal* infections.**

Authors: Clark L, Skrupky LP, Servais R, Brummitt CF, Dilworth TJ. | [Download Paper](#)

**Vancomycin AUC/MIC ratio and 30-day mortality in patients with *Staphylococcus aureus* bacteremia.**

Authors: Holmes NE, Turnidge JD, Munckhof WJ, et al.  
[Download Paper](#)

**Vancomycin trough concentration as a predictor of clinical outcomes in patients with *Staphylococcus aureus* bacteremia: a meta-analysis of observational studies.**

Authors: Prybylski JP. | [Download Paper](#)

**Making the change to area under the curve-based vancomycin dosing.**

Authors: Heil EL, Claeys KC, et al | [Download Paper](#)

**Vancomycin AUC/MIC ratio and 30-day mortality in patients with Staphylococcus aureus bacteremia.**

Authors: Holmes NE, Turnidge JD, Munckhof WJ, et al.  
[Download Paper](#)

**Vancomycin trough concentration as a predictor of clinical outcomes in patients with Staphylococcus aureus bacteremia: a meta-analysis of observational studies.**

Authors: Prybylski JP. | [Download Paper](#)

---

**Increased proportion of pediatric patients in therapeutic range/AUC**

**Improved vancomycin dosing in children using area under the curve exposure.**

Authors: Le J, Bradley JS, Murray W, et al.  
[Download Paper](#)

**Early Bayesian dose adjustment of vancomycin continuous infusion in children: a randomized controlled trial.**

Authors: Berthaud R, Benaboud S, Hirt D, et al.  
[Download Paper](#)

---

**Optimal vancomycin dosing in obesity**

**Pharmacodynamics of vancomycin and other antimicrobials in patients with Staphylococcus aureus lower respiratory tract infections.**

Authors: Moise-Broder PA, Forrest A, Birmingham MC, Schentag JJ. | [Download Paper](#)

**Population pharmacokinetics of vancomycin in obesity: finding the optimal dose for (morbidly) obese individuals.**

Authors: Smit C, Wasmann RE, Goulooze SC, et al.  
[Download Paper](#)

**An AUC target simulation for vancomycin in patients with class III obesity.**

Authors: Langton MM, Ahern JW, MacDougall J.  
[Download Paper](#)

**AUC-based monitoring results in fewer dose adjustments**

**The impact of AUC-based monitoring on pharmacist-directed vancomycin dose adjustments in complicated methicillin-resistant Staphylococcus aureus infection.**

Authors: Stoessel AM, Hale CM, Seabury RW, Miller CD, Steele JM. | [Download Paper](#)

**Examining the relationship between vancomycin area under the concentration time curve and serum trough levels in adults with presumed or documented Staphylococcal infections.**

Authors: Clark L, Skrupky LP, Servais R, Brummitt CF, Dilworth TJ. | [Download Paper](#)

---

**Pharmacokinetic modelling for vancomycin**

**Vancomycin pharmacokinetics throughout life: results from a pooled population analysis and evaluation of current dosing recommendations.**

Authors: Colin PJ, Allegaert K, Thomson AH, Touw DJ, Dolton M, de Hoog M, et al. | [Download Paper](#)

**Towards precision dosing of vancomycin: a systematic evaluation of pharmacometric models for Bayesian forecasting.**

Authors: Broeker A, Nardecchia M, Klinker KP, Derendorf H, Day RO, Marriott DJ, et al.  
[Download Paper](#)

**Vancomycin: we can't get there from here.**

Authors: Patel N, Pai MP, Rodvold KA, Lomaestro B, Drusano GL, Lodise TP. | [Download Paper](#)

**Comparison of the area-under-the-curve for vancomycin estimated using compartmental and non-compartmental methods in adult patients with normal renal function.**

Authors: Shingde RV, Graham GG, Reuter SE, Carland JE, Day RO, Stocker SL. | [Download Paper](#)

**The dosing and monitoring of vancomycin: what is the best way forward?**

Authors: Drennan PG, Begg EJ, Gardiner SJ, Kirkpatrick CMJ, Chambers ST. | [Download Paper](#)

## Reduce adverse events

Research articles regarding the decreased risk of nephrotoxicity associated with AUC-based monitoring of vancomycin.

### **Vancomycin area under the curve and acute kidney injury: a meta-analysis.**

Authors: Aljefri DM, Avedissian SN, Rhodes NJ, Postelnick MJ, Nguyen K, Scheetz MH.

[Download Paper](#)

### **The impact of vancomycin area under the concentration-time curve-guided dosing on vancomycin-associated nephrotoxicity: a quasi-experiment.**

Authors: Finch NA, Zasowski EJ, Murray KP, et al.

[Download Paper](#)

### **Navigating the Muddy Waters of Vancomycin Nephrotoxicity.**

Authors: Barreto, EF, et al. | [Download Paper](#)

---

## Reduce costs

AUC-based vancomycin dosing has the potential for substantial cost savings due to associations with decreased nephrotoxicity, reduced per-patient blood sampling and decreased length of therapy.

### **AUC24 Vancomycin Bayesian-based dosing: Increasing Therapeutic Target Attainment with Decreased Monitoring Costs**

Authors: Sabourenkov P, McLeay R.

[Download Paper](#)

### **Prospective trial on the use of trough concentration versus area under the curve to determine therapeutic vancomycin dosing.**

Authors: Neely MN, Kato L, Youn G, et al.

[Download Paper](#)

## Implementation

Research articles regarding the implementation of AUC-based monitoring of vancomycin.

### **Vancomycin area under the curve dosing and monitoring at an academic medical center: transition strategies and lessons learned.**

Authors: Gregory ER, Burgess DR, Cotner SE, et al.

[Download Paper](#)

### **Readiness to implement vancomycin monitoring based on area under the concentration-time curve: a cross-sectional survey of a national health consortium.**

Authors: Kufel WD, Seabury RW, Mogle BT, Beccari MV, Probst LA, Steele JM. | [Download Paper](#)

[Download Paper](#)

### **Conversion from vancomycin trough concentration-guided dosing to area under the curve-guided dosing using two sample measurements in adults: implementation at an academic medical center.**

Authors: Meng L, Wong T, Huang S, et al.

[Download Paper](#)