Supplemental Table 1: Association of highest trough vancomycin level categories with risk of incident AKI in adjusted and unadjusted logistic regression models in 22,057 US veterans. The group with vancomycin level of <10 mg/L served as referent.

Vancomycin level (<10 mg/L as referent)	Model 1 OR (95%CI)	Model 2 OR (95%CI)	Model 3 OR (95%CI)	Model 4 OR (95%CI)	Model 5+PO2 OR (95%CI)	Model 5-pO2 OR (95%CI)
10-15 mg/L	1.4 (1.3-1.6)	1.4 (1.2-1.6)	1.4 (1.2-1.6)	1.3 (1.2-1.5)	1.2 (0.9-1.5)	1.4 (1.2-1.6)
15-20 mg/L	2.6 (2.3-3.0)	2.3 (2.0-2.7)	2.26 (2.0-2.6)	2.2 (1.9-2.5)	1.9 (1.5-2.4)	2.1 (1.8-2.5)
>20 mg/L	5.3 (4.7-6)	4.5 (4-5.1)	4.3 (3.8-4.9)	4.1 (3.6-4.7)	3.6 (2.9-4.5)	4.1 (3.5-4.9)

Model 1: unadjusted; model 2: demographic characteristics; model 3: model 2 variables plus comorbidities; model 4: model 3 variables plus medications, systolic/diastolic blood pressure and body mass index (BMI); model 5: model 4 variables and SOFA score components (platelet count, bilirubin and vasopressor/ionotropic medications, with and without the addition of arterial pO2; model 5 – pO2 and + pO2).

Supplemental Table 2: Odds ratios of various stages of AKI (vs. no AKI) associated with vancomycin vs. nonglycopeptide use, overall and in subgroups categorized by the highest recorded vancomycin level.

Stage of AKI	Overall (95%CI)	Vancomycin level <10 mg/L OR (95%CI)	Vancomycin level 10-15mg/L OR (95%CI)	Vancomycin level >15-20mg/L OR (95%CI)	Vancomycin level >20mg/L OR (95%CI)
AKI Stage 1	1.1 (1.1-1.2)	0.5 (0.4-0.6)	0.7 (0.6-0.8)	1 (0.9-1.2)	1.5 (1.4-1.7)
AKI Stage 2	1.2 (1-1.4)	0.5 (0.4-0.6)	0.6 (0.4-0.7)	0.9 (0.6-0.9)	1.9 (1.5-2.3)
AKI Stage 3	1.4 (1.1-1.7)	0.6 (0.4-0.8)	0.5(0.4-0.7)	0.8 (0.6-1.2)	2.7 (2-3.5)

Supplemental Table 3: Association of highest trough vancomycin level categories with risk of incident AKI in adjusted and unadjusted logistic regression models in 21,667 US veterans (after excluding patients who died). The group with vancomycin level of <10 mg/L served as referent.

Vancomycin level (<10 mg/L as referent)	Model 1 OR (95%CI)	Model 2 OR (95%CI)	Model 3 OR (95%CI)	Model 4 OR (95%CI)	Model 5+PO2 OR (95%CI)	Model 5-pO2 OR (95%CI)
10-15 mg/L	1.5 (1.3-1.7)	1.4 (1.2-1.6)	1.4 (1.2-1.6)	1.4 (1.2-1.6)	1.1 (0.9-1.4)	1.4 (1.2-1.6)
15-20 mg/L	2.6 (2.3-3)	2.3 (2.-2.7)	2.3 (2-2.6)	2.2 (1.9-2.5)	1.8 (1.4-2.3)	2.1(1.8-2.5)
>20 mg/L	5.3 (4.7-6.1)	4.6 (4-5.2)	4.4 (3.8-5.0)	4.1 (3.7-4.8)	3.6 (2.8-4.5)	4.1 (3.5-4.9)

Supplemental Table 4: Odds ratios of various stages of AKI (vs. no AKI) associated with vancomycin vs. nonglycopeptide use after excluding dead patients, overall and in subgroups categorized by the highest recorded vancomycin level.

Stage of AKI	Overall (95%CI)	Vancomycin level <10 mg/L OR (95%CI)	Vancomycin level 10-15mg/L OR (95%CI)	Vancomycin level >15-20mg/L OR (95%CI)	Vancomycin level >20mg/L OR (95%CI)
AKI Stage 1	1.1 (1.0-1.2)	0.5 (0.4-0.5)	0.6 (0.6-0.7)	1 (0.9-1.1)	1.5 (1.3-1.7)
AKI Stage 2	1.1 (1.0-1.3)	0.5 (0.3-0.6)	0.6 (0.4-0.7)	0.8 (0.6-1.0)	2.0 (1.6-2.4)
AKI Stage 3	1.5 (1.3-1.9)	0.8 (0.5-1.2)	0.6 (0.4-0.8)	0.8 (0.6-1.2)	3.2 (2.4-4.4)

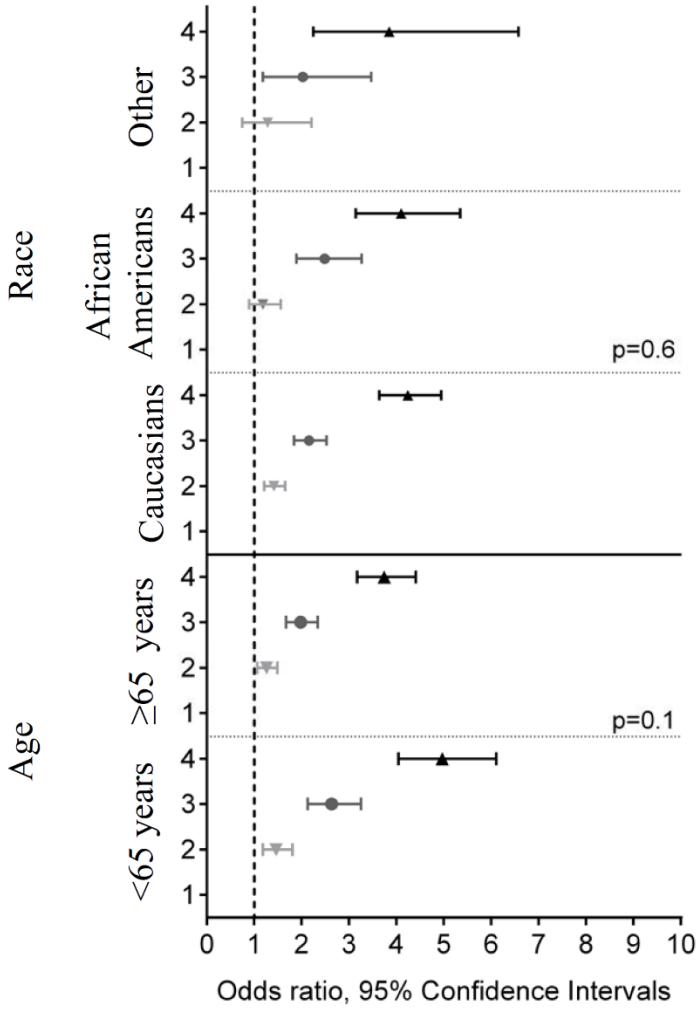

Figure S1-A

Association of maximum trough vancomycin levels with risk of incident AKI in multivariable adjusted Cox regression models in patients categorized by their age (<65years vs. ≥65years) and race. P-values are for interaction between age and vancomycin levels, and race and vancomycin levels. Patients divided into 4 groups based on the highest recorded vancomycin trough level 1: < 10mg/L, 2: 10-15 mg/L, 3: 15.1-20 mg/L and 4: >20mg/L

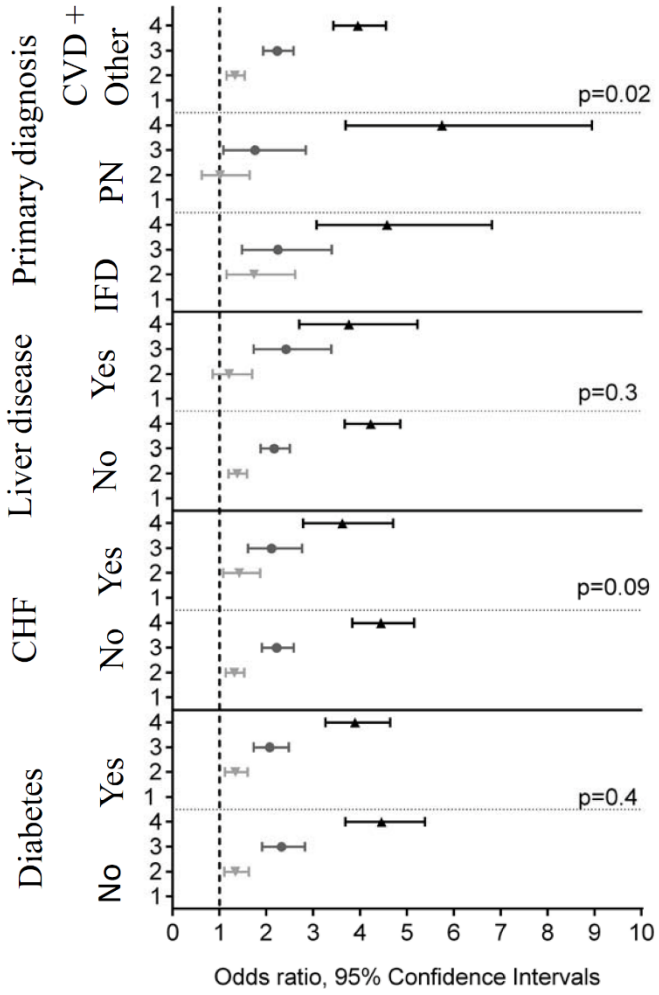

Figure S1-B

Association of maximum trough vancomycin levels with risk of incident AKI in multivariable adjusted Cox regression models in patients categorized by diabetes, CHF (congestive heart failure), liver disease and primary hospital admission diagnosis (IFD: infection; PN: pneumonia; CVD: cardiovascular). P values are for interaction between disease state and vancomycin levels.1: < 10mg/L, 2: 10-15 mg/L, 3: 15.1-20 mg/L and 4: >20mg/L

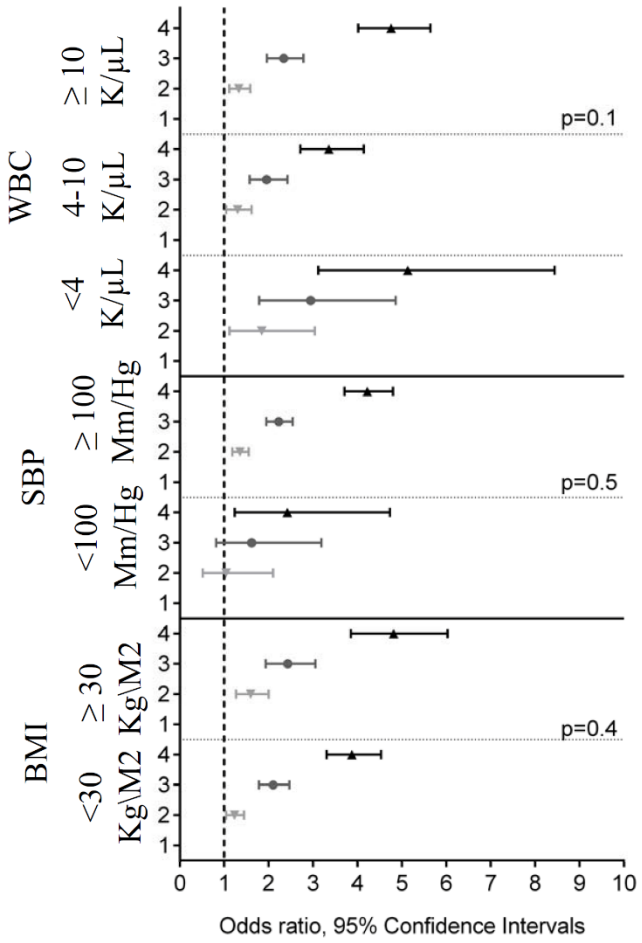

Figure S1-C

Association of maximum trough vancomycin levels with risk of incident AKI in multivariable adjusted Cox regression models in patients categorized by BMI (<30kg/m^2 vs. ≥30kg/m^2), SBP (<100mmHg vs. ≥100mmHg) and WBC count (<4L/µL, 4-10/µL, >10/µL). BMI: body mass index, SBP: systolic blood pressure, WBC: white blood count. P-values are for interaction of BMI, SBP and WBC with vancomycin levels.

Patients were divided into 4 groups based on the highest recorded vancomycin trough level 1: <10mg/L, 2: 10-15 mg/L, 3: 15.1-20 mg/L and 4: >20mg/L

Models were adjusted for patient demographics, body mass index (BMI), comorbidities, baseline eGFR, mean arterial pressure, and nephrotoxic medication exposure (Model 4).

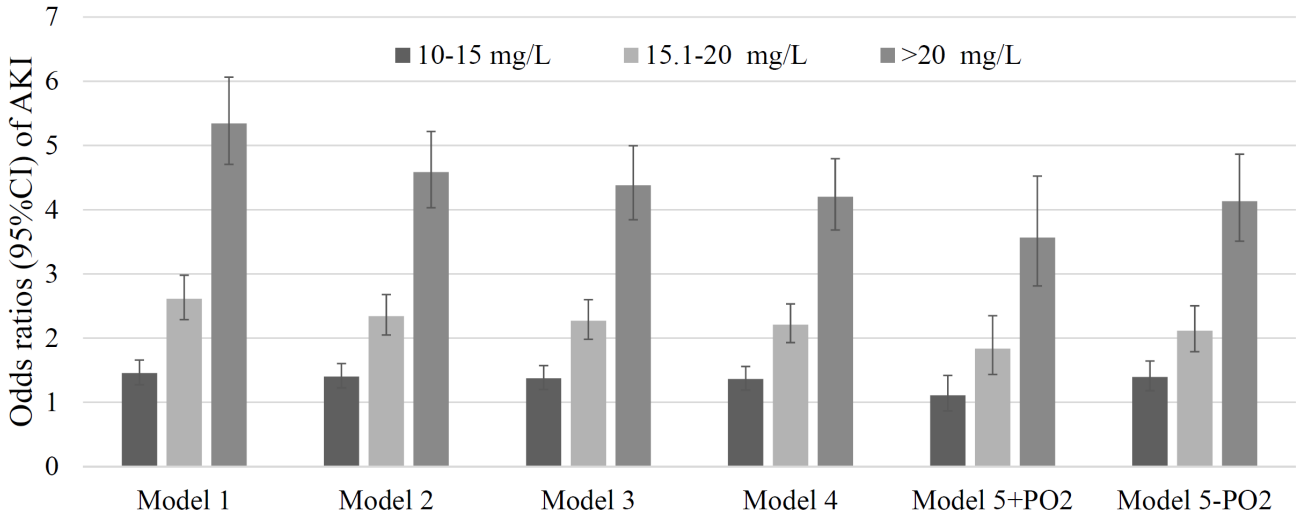

Figure S1-D

Association of maximum trough serum vancomycin levels with risk of incident AKI in adjusted and unadjusted logistic regression models in 21,667 US veterans (after excluding patients who died).

Model 1: unadjusted; model 2: demographic characteristics; model 3: model 2 variables plus comorbidities; model 4: model 3 variables plus medications, systolic/diastolic blood pressure and body mass index (BMI); model 5: model 4 variables and SOFA score components (platelet count, bilirubin and vasopressor/ionotropic medications, with and without the addition of arterial pO2; model 5 – pO2 and + pO2).

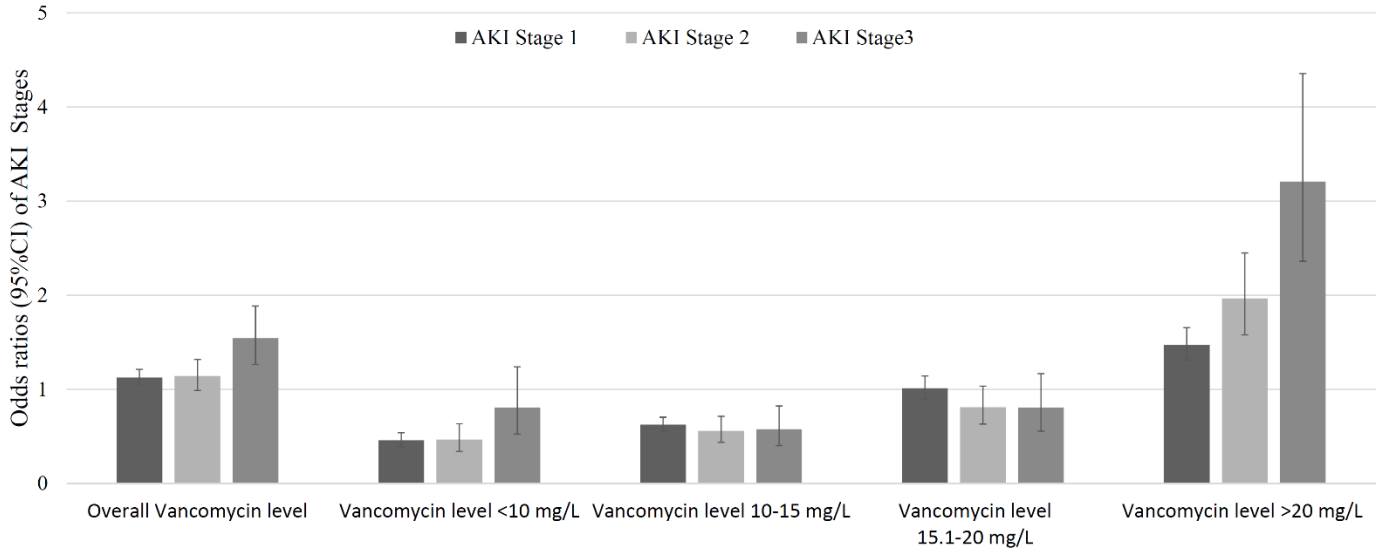

Figure S1-E

Odds ratios of various stages of AKI (vs. no AKI) associated with vancomycin vs. non-glycopeptide use (after excluding dead patients), in propensity score-matched patients overall and in groups categorized by maximum trough serum vancomycin level.