Supplementary Table 1:

(A) AKI within 48 h

	Sensitivity	Specificity	AUC	n
Clinical Model				
Gender (Female)	0.54 (0.47-0.61)	0.54 (0.48-0.59)	0.56(0.48-0.59)	669
APACHE II	0.60 (0.56-0.64)	0.60 (0.56-0.65)	0.63 (0.62-0.63)	669
Serum Creatinine	0.72 (0.66-0.73)	0.62 (0.61-0.67)	0.70 (0.69-0.70)	669
Urine Output (ml/hr)	0.63 (0.62-0.67)	0.73 (0.68-0.74)	0.72 (0.72-0.72)	669
BUN	0.63 (0.59-0.68)	0.60 (0.56-0.64)	0.64 (0.63-0.64)	669
Urinary AKI Biomarker				
Albumin	0.66 (0.58-0.67)	0.64 (0.64-0.74)	0.68 (0.68-0.69)	669
NGAL	0.71 (0.69-0.76)	0.59 (0.55-0.60)	0.70 (0.7-0.704)	669
L-FABP	0.60 (0.59-0.66)	0.69 (0.62-0.702)	0.69 (0.68-0.69)	357
Kim1	0.59 (0.58-0.60)	0.70 (0.68-0.71)	0.65 (0.64-0.65)	361
πGST	0.58 (0.52-0.61)	0.61 (0.58-0.69)	0.59 (0.58-0.59)	304
αGST	0.50 (0.42-0.61)	0.57 (0.48-0.69)	0.53 (0.47-0.59)	303
Cystatin C	0.65 (0.63-0.67)	0.61 (0.59-0.62)	0.63 (0.62-0.63)	355
Combination				
Clinical Model	0.70 (0.65-0.74)	0.69 (0.65-0.75)	0.75 (0.75-0.76)	669
Clinical Model + Urinary NGAL + Albumin	0.73 (0.66-0.76)	0.69 (0.65-0.76)	0.78 (0.77-0.78)	669
Clinical Model + All urinary biomarkers	0.73 (0.69-0.77)	0.76 (0.72-0.81)	0.80 (0.79-0.81)	355

(B) AKI within 7 days

	Sensitivity	Specificity	AUC	n
Clinical Model				
Gender (Female)	0.54 (0.48-0.60)	0.54 (0.44-0.60)	0.55 (0.46-0.59)	669
APACHE II	0.61 (0.59-0.64)	0.61 (0.58-0.63)	0.64 (0.63-0.64)	669
Serum Creatinine	0.69 (0.64-0.71)	0.65 (0.63-0.70)	0.70 (0.69-0.70)	669
Urine Output (ml/hr)	0.63 (0.58-0.66)	0.68 (0.65-0.75)	0.69 (0.68-0.69)	669
BUN	0.61 (0.58-0.67)	0.62 (0.56-0.65)	0.64 (0.63-0.64)	669
Urinary AKI Biomarker				
Albumin	0.67 (0.65-0.73)	0.61 (0.57-0.63)	0.70 (0.69-0.70)	669
NGAL	0.59 (0.57-0.62)	0.70 (0.66-0.72)	0.68(0.68-0.68)	669
L-FABP	0.57 (0.56-0.59)	0.70 (0.67-0.72)	0.64 (0.63-0.64)	357
Kim1	0.57 (0.55-0.60)	0.58 (0.56-0.60)	0.57 (0.56-0.57)	361
πGST	0.50 (0.48-0.55)	0.61 (0.54-0.65)	0.52 (0.50-0.53)	304
αGST	0.65 (0.63-0.66)	0.64 (0.62-0.65)	0.64 (0.63-0.64)	303
Cystatin C	0.67 (0.65-0.73)	0.61 (0.57-0.63)	0.70 (0.69-0.70)	355
Combination				
Clinical Model	0.65 (0.61-0.73)	0.72 (0.64-0.77)	0.74 (0.73-0.74)	669
Clinical Model + Urinary NGAL + Albumin	0.66 (0.62-0.70)	0.73 (0.68-0.76)	0.76 (0.75-0.76)	669
Clinical Model + All urinary biomarkers	0.66 (0.62-0.69)	0.79 (0.73-0.86)	0.78 (0.77-0.79)	355

Supplementary Table 2 – Sensitivity analysis

(A) **An evaluation of sensitivity of study results for prediction of AKI within 48h to the inclusion of recovery cases in the definition of AKI.** AKI, acute kidney injury, AUC, area under the receiver operating curve; df, degree's of freedom; UCr, urinary creatinine

	Prediction of 48h AKI (results as shown in Figure 2)		Prediction of 48h AKI (including recovery)		
	AUC	DeLong's test	AUC	DeLong's test	n
NGAL + Albumin					
Clinical Model	0.758 (0.753-0.762)	D = 0.73, df = 1331.8, p = 0.464	0.778 (0.774-0.781)	D = 0.886, df = 1331.9, p = 0.376	669
Clinical Model + Urinary NGAL + Albumin	0.779 (0.775-0.783)		0.8 (0.796-0.803)		669
All Biomarkers					
Clinical Model	0.78 (0.772-0.786)	D = 0.59, df = 706.68, p= 0.555	0.772 (0.765-0.777)	D = 1.087, df = 704.02, p = 0.277	335
Clinical Model + All urinary biomarkers	0.802 (0.794-0.81)		0.809 (0.799-0.816)		355

(B) **An evaluation of sensitivity of study results for prediction of AKI within 7d to the inclusion of recovery cases in the definition of AKI**

	Prediction of 7d AKI (results as shown in Figure 2)		Prediction of 7d AKI (including recovery)		
	AUC	DeLong's test	AUC	DeLong's test	n
NGAL + Albumin					
Clinical Model	0.738 (0.734-0.742)	D = 0.735, df = 1331, p = 0.467	0.766 (0.762-0.769)	D = 0.874, df = 1331.6, p = 0.382	669
Clinical Model + Urinary NGAL + Albumin	0.76 (0.755-0.763)		0.788 (0.785-0.791)		669
All biomarkers					
Clinical Model	0.752 (0.745-0.757)	D = 0.7338, df = 706.05, p = 0.4633	0.753 (0.745-0.758)	D = 1.457, df=700.95, p = 0.146	335
Clinical Model + All urinary biomarkers	0.78 (0.771-0.788)		0.803 (0.794-0.81)		355

(C) **An evaluation of sensitivity of study results for prediction of Stage 3 AKI (vs no AKI or Stage 1 or 2 AKI) to the inclusion of biomarkers standardized relative to urine creatinine**

	Prediction of Stage 3 AKI (results as shown in Figure 1)		Prediction of Stage 3 AKI (with biomarkers over uCr)	
	AUC	DeLong's test	AUC	DeLong's test
NGAL + Albumin				
Clinical Model[*]	0.871 (0.866-0.875)	D = 0.899, df = 1309.3, p= 0.369	0.869 (0.863-0.873)	D = 0.743, df = 1313, p = 0.458
Clinical Model + Urinary NGAL + Albumin	0.896 (0.891-0.899)		0.89 (0.885-0.893)	
All biomarkers				

Clinical Model[*]	0.854 (0.844-0.86)	D = 0.841, df = 679.7, p = 0.401	0.857 (0.846-0.865) 0.883 (0.873-0.892)	D = 0.656, df = 682.71, p= 0.5118
Clinical Model + All urinary biomarkers	0.885 (0.874-0.893)			

[*] results for the clinical model may differ slightly in the comparison of unstandardized and standardized results due to differences in completeness of datasets from the addition of uCr to the analysis

(D) An evaluation of sensitivity of study results for prediction of AKI within 48h to the inclusion of biomarkers standardized relative to urine creatinine

	Prediction of 48h AKI (results as shown in Figure 2)		Prediction of 48h AKI (with biomarkers over uCr)	
	AUC	DeLong's test	AUC	DeLong's test
NGAL + Albumin				
Clinical Model[*]	0.758 (0.753-0.762)	D = 0.73, df = 1331.8, p = 0.464	0.758 (0.752-0.762) 0.78 (0.775-0.784)	D = 0.7694, df = 1320.1, p = 0.442
Clinical Model + Urinary NGAL + Albumin	0.779 (0.775-0.783)			
All biomarkers				
Clinical Model[*]	0.78 (0.772-0.786)	D = 0.59, df = 706.68, p= 0.555	0.774 (0.766-0.781)	D = 0.695, df = 684.64, p = 0.487
Clinical Model + All urinary biomarkers	0.802 (0.794-0.81)		0.801 (0.791-0.809)	

[*] results for the clinical model may differ slightly in the comparison of unstandardized and standardized results due to differences in completeness of datasets from the addition of uCr to the analysis

(E) An evaluation of sensitivity of study results for prediction of AKI within 7d to the inclusion of biomarkers standardized relative to urine creatinine

	Prediction of 7d AKI (results as shown in Figure 2)		Prediction of 7d AKI (with biomarkers over uCr)	
	AUC	DeLong's test	AUC	DeLong's test
NGAL + Albumin				
Clinical Model[*]	0.738 (0.734-0.742)	D = 0.735, df = 1331, p = 0.467	0.739 (0.734-0.743) 0.757 (0.752-0.761)	D = 0.622, df = 1320.9, p= 0.534
Clinical Model + Urinary NGAL + Albumin	0.76 (0.755-0.763)			
All biomarkers				
Clinical Model[*]	0.752 (0.745-0.757)	D = 0.7338, df = 706.05, p = 0.4633	0.745 (0.737-0.751) 0.773 (0.763-0.781)	D = 0.698, df = 686.26, p= 0.485
Clinical Model + All urinary biomarkers	0.78 (0.771-0.788)			

[*] results for the clinical model may differ slightly in the comparison of unstandardized and standardized results due to differences in completeness of datasets from the addition of uCr to the analysis

(F) An evaluation of sensitivity of study results for prediction of Death or RRT (30 days) to the inclusion of biomarkers standardized relative to urine creatinine

	Prediction of Death or RRT (results as shown in Figure 4)		Prediction of Death or RRT (with biomarkers over uCr)	
	AUC	DeLong's test	AUC	DeLong's test
NGAL + Albumin				
Clinical Model[*]	0.789 (0.784-0.792)	D = 1.481, df = 1319.4, p = 0.139	0.793 (0.79-0.797)	D = 1.4964, df = 1311.4, p = 0.1348
Clinical Model + Urinary NGAL + Albumin	0.828 (0.824-0.831)		0.833 (0.829-0.836)	
All biomarkers				
Clinical Model[*]	0.735 (0.725-0.741)	D = 0.831, df = 703.95, p= 0.406	0.738 (0.729-0.744)	D = 1.037, df = 683.03, p = 0.3003
Clinical Model + All urinary biomarkers	0.768 (0.756-0.776)		0.778 (0.767-0.787)	

[*]results for the clinical model may differ slightly in the comparison of unstandardized and standardized results due to differences in completeness of datasets from the addition of uCr to the analysis