

Additional file Table S1: Patient characteristics of non-transfused and transfused patients

	Non-transfused (n=1146)	Transfused (n=652)	P-value
Age, years	61 [48-72]	66 [56-75]	<0.001
Male gender	741 (64.7%)	411 (63.0%)	0.506
Operative admission	309 (27.0%)	331 (50.8%)	<0.001
Emergency admission	1060/1142 (92.8%)	514/642 (80.1%)	<0.001
Emergency surgery <1 week	228 (19.9%)	187 (28.7%)	0.201
Cardiac or vascular surgery	102 (8.9%)	170 (26.1)	<0.001
Trauma	72 (6.3%)	44 (6.7%)	0.691
Severe sepsis	319 (27.8%)	222 (34.0%)	0.006
DIC	27/1116 (2.4%)	46/629 (7.3%)	<0.001
Acute kidney injury	366 (31.9%)	309 (47.4%)	<0.001
Renal replacement therapy	68 (5.9%)	96 (14.7%)	<0.001
SAPS II score	35 [26-48]	37 [29-50]	<0.001
Maximum SOFA score*	7 [4-9]	8 [6-11]	<0.001
Lactate** (mmol/L)	2.1 [1.3-3.7]	2.40 [1.44-4.41]	<0.001
Massive transfusion pre-ICU†	22 (1.9%)	39 (6.0%)	<0.001
Admission hemoglobin (g/L)‡	120 [107-133]	98 [88-110]	<0.001

Data are expressed as median [IQR] or count (percentage)

DIC Disseminated Intravascular Coagulopathy, IQR Interquartile Range

*Data missing for 1 transfused patient

** Highest lactate 24 h preceding ICU admission or on first ICU treatment day. Data missing for 264 non-transfused and 51 transfused patients.

†Transfusion >10 RBC units in 24 hours

‡Data missing for 130 non-transfused and 77 transfused patients.

ICU intensive care unit, DIC disseminated intravascular coagulopathy, SAPS II Simplified

Acute Physiology Score, SOFA Sequential Organ Failure Assessment

Additional file Table S2: Times for ICU (Intensive Care Unit) admission and AKI (Acute Kidney Injury).

	Q1	Q2	Q3	Q4	P
no of patients with AKI	52	78	90	89	
Time from ICU admission to first AKI (hours)	17.2 [8.0-32.0]	11.0 [5.8-25.7]	10.9 [5.0-29.4]	8.5 [1.4-20.3]	0.052
Time from ICU admission to highest AKI (hours)	19.4 [12.2-35.6]	20.5 [6.7-39.2]	22.6 [8.8-41.1]	14.8 [5.3-42.9]	0.531
Time from ICU admission to first RBC (days) median (IQR)	0 [0-1]	0 [0-1]	0[0-2]	0[0-2]	0.625
Time from ICU admission to first RBC (days) mean (SD)	0.94 (1.9)	1.1 (2.1)	1.4(2.5)	1.5 (3.5)	
Time from hospital admission to ICU admission (days) median (IQR)	1 [0-2]	1 [0-2]	1 [0-2]	1 [0-2.3]	0.957
Time from hospital admission to ICU admission (days) mean (SD)	5.0 (31.2)	5.5 (30.5)	4.4 (27.6)	3.5 (10.2)	

Additional file Table S3: Odds ratios with 95% Confidence Intervals of logistic regression analysis for hospital mortality

Variable	Odds ratio	95% Confidence Interval		P-value
		Lower	Upper	
Age	1.036	1.015	1.057	0.001
Propensity score for receiving >14 days old RBC	0.693	0.023	20.591	0.832
Number of transfused units	1.013	0.978	1.050	0.466
Acute kidney injury	0.93	0.513	1.686	0.811
Severe sepsis	0.881	0.491	1.580	0.671
RBC age Q 2-4 vs. Q1	2.157	1.023	4.546	0.043
APACHE II diagnosis group	1.001	0.999	1.003	0.354
Operative admission	1.539	0.817	2.898	0.182
Emergency admission	2.394	0.671	8.540	0.178
DIC	1.632	0.68	3.915	0.272
SAPS II score without age points	1.031	1.009	1.054	0.005
SOFA score, maximum during ICU stay	1.213	1.093	1.345	<0.001
Highest lactate	1.054	0.993	1.120	0.085
Female gender	0.864	0.504	1.482	0.596

Included patients 571 (132 in Q1 and 468 in Q2-4)

Hosmer-Lemeshow Chi-square 7.781, P=0.455

Additional file Table S4: Cox regression analysis for 90 –day mortality (enter method)

Variable	Hazard ratio, HR	95% confidence interval for HR		P-value
		Lower	Upper	
Age	1.030	1.017	1.043	<0.001
Propensity score for receiving >14 days old RBC	0.268	0.033	2.196	0.22
Number of transfused units	1.021	1.004	1.040	0.019
Acute kidney injury	0.828	0.563	1.219	0.339
Severe sepsis	0.863	0.608	1.226	0.411
RBC age Q2-4 vs.Q1	1.182	0.757	1.847	0.462
APACHE II diagnosis group	1.000	0.999	1.001	0.707
Operative admission	1.266	0.861	1.862	0.231
Emergency admission	1.480	0.657	3.334	0.345
DIC	1.073	0.649	1.775	0.783
SAPS II score without age points	1.024	1.010	1.037	0.001
SOFA score, maximum during ICU stay	1.163	1.092	1.239	<0.001
Highest lactate	1.008	0.971	1.046	0.68
Female gender	1.161	0.828	1.627	0.386