

**Table 1: Comparisons of the baseline clinical characteristics between sepsis and non-sepsis**

		Grouped by sepsis			
		Missing	Overall	0	1 P-Value
	n		17426	11544	5882
age, mean (SD)		0	64.0 (15.9)	63.5 (15.8)	65.1 (15.9) <0.001
gender, n (%)	F	0	6865 (39.4)	4298 (37.2)	2567 (43.6) <0.001
	M		10561 (60.6)	7246 (62.8)	3315 (56.4)
weight, mean (SD)		534	83.7 (23.7)	84.3 (22.8)	82.6 (25.2) <0.001
sofa_score, mean (SD)		0	7.2 (4.0)	6.7 (3.9)	8.3 (3.9) <0.001
sapsii_score, mean (SD)		0	41.1 (14.7)	39.6 (14.5)	44.0 (14.8) <0.001
length_of_hospital_stay, median [Q1,Q3]		0	9.0 [5.0,15.0]	9.0 [5.0,14.0]	9.0 [6.0,16.0] <0.001
length_of_icu_stay, median [Q1,Q3]		0	3.0 [2.0,6.0]	3.0 [1.0,5.0]	3.0 [2.0,6.0] <0.001
daily_urine_output, median [Q1,Q3]		376	1555.0 [960.2,2360.0]	1630.0 [1050.0,2410.0]	1400.0 [800.0,2215.0] <0.001
died_in_28_days, n (%)	0	0	14942 (85.7)	10182 (88.2)	4760 (80.9) <0.001
	1		2484 (14.3)	1362 (11.8)	1122 (19.1)
congestive_heart_failure, n (%)	0.0	10	12680 (72.8)	8480 (73.5)	4200 (71.5) 0.005
	1.0		4736 (27.2)	3060 (26.5)	1676 (28.5)
myocardial_infarction, n (%)	0.0	10	14371 (82.5)	9359 (81.1)	5012 (85.3) <0.001
	1.0		3045 (17.5)	2181 (18.9)	864 (14.7)
cerebrovascular_disease, n (%)	0.0	10	17071 (98.0)	11352 (98.4)	5719 (97.3) <0.001
	1.0		345 (2.0)	188 (1.6)	157 (2.7)
chronic_pulmonary_disease, n (%)	0.0	10	16380 (94.1)	10908 (94.5)	5472 (93.1) <0.001
	1.0		1036 (5.9)	632 (5.5)	404 (6.9)
mild_liver_disease, n (%)	0.0	10	17144 (98.4)	11384 (98.6)	5760 (98.0) 0.002
	1.0		272 (1.6)	156 (1.4)	116 (2.0)
severe_liver_disease, n (%)	0.0	10	17364 (99.7)	11507 (99.7)	5857 (99.7) 0.779
	1.0		52 (0.3)	33 (0.3)	19 (0.3)
diabetes_without_complication, n (%)	0.0	10	14286 (82.0)	9466 (82.0)	4820 (82.0) 1.000
	1.0		3130 (18.0)	2074 (18.0)	1056 (18.0)
diabetes_with_complication, n (%)	0.0	10	17314 (99.4)	11474 (99.4)	5840 (99.4) 0.820
	1.0		102 (0.6)	66 (0.6)	36 (0.6)
renal_disease, n (%)	0.0	10	16735 (96.1)	11147 (96.6)	5588 (95.1) <0.001
	1.0		681 (3.9)	393 (3.4)	288 (4.9)

max_anion_gap, mean (SD)	86	15.9 (5.2)	15.3 (4.9)	17.1 (5.5)	<0.001
min_albumin, mean (SD)	12260	2.9 (2.0)	3.0 (2.1)	2.9 (1.7)	0.006
max_bilirubin, median [Q1,Q3]	9142	0.9 [0.5,2.1]	0.8 [0.5,1.8]	1.0 [0.5,2.5]	<0.001
max_creatinine, mean (SD)	50	14.0 (66.1)	11.5 (72.0)	18.9 (52.2)	<0.001
max_glucose, mean (SD)	39	193.2 (118.7)	191.1 (108.8)	197.4 (136.0)	0.002
min_hemoglobin, mean (SD)	118	9.3 (2.2)	9.3 (2.2)	9.5 (2.2)	<0.001
min_platelet, mean (SD)	137	165.5 (94.0)	163.7 (88.9)	169.1 (103.1)	0.001
max_potassium, mean (SD)	33	7.7 (12.3)	7.0 (10.4)	9.1 (15.3)	<0.001
max_pt, mean (SD)	1455	17.9 (10.3)	17.2 (9.5)	19.3 (11.7)	<0.001
max_sodium, mean (SD)	38	139.9 (8.6)	139.8 (4.8)	140.1 (13.2)	0.129
min_sodium, mean (SD)	38	127.6 (27.7)	129.4 (24.2)	124.0 (33.2)	<0.001
max_blood_urea_nitrogen, mean (SD)	56	28.9 (22.9)	26.1 (20.7)	34.4 (25.7)	<0.001
max_wbc_count, mean (SD)	138	16.0 (11.0)	15.8 (9.5)	16.5 (13.4)	0.001
mean_heart_rate, mean (SD)	25	87.3 (15.9)	86.2 (15.3)	89.3 (16.9)	<0.001
min_systolic_bp, mean (SD)	15315	88.8 (21.6)	88.3 (21.8)	90.2 (20.9)	0.059
min_diastolic_bp, mean (SD)	15336	47.5 (12.6)	47.2 (12.8)	48.3 (12.0)	0.073
min_mean_arterial_bp, mean (SD)	6195	59.1 (13.1)	59.3 (12.3)	58.8 (15.1)	0.102
max_respiratory_rate, mean (SD)	32	29.2 (15.6)	28.7 (15.5)	30.1 (15.7)	<0.001
min_pulse_saturation, mean (SD)	28	4.1 (6.4)	3.5 (6.0)	5.2 (7.0)	<0.001
max_lactate, median [Q1,Q3]	0	2.6 [1.8,3.8]	2.6 [1.8,3.7]	2.6 [1.8,4.1]	<0.001
mean_lactate, median [Q1,Q3]	0	2.0 [1.5,2.9]	2.0 [1.5,2.8]	2.1 [1.5,3.1]	<0.001
lactate_load, median [Q1,Q3]	0	46.0 [34.0,64.2]	45.2 [33.6,61.8]	47.8 [34.8,69.5]	<0.001
normalized_lactate_load, median [Q1,Q3]	0	1.9 [1.4,2.7]	1.9 [1.4,2.6]	2.0 [1.5,2.9]	<0.001

Figure 3: Severity score and normalized lactate load in sepsis and non-sepsis patients

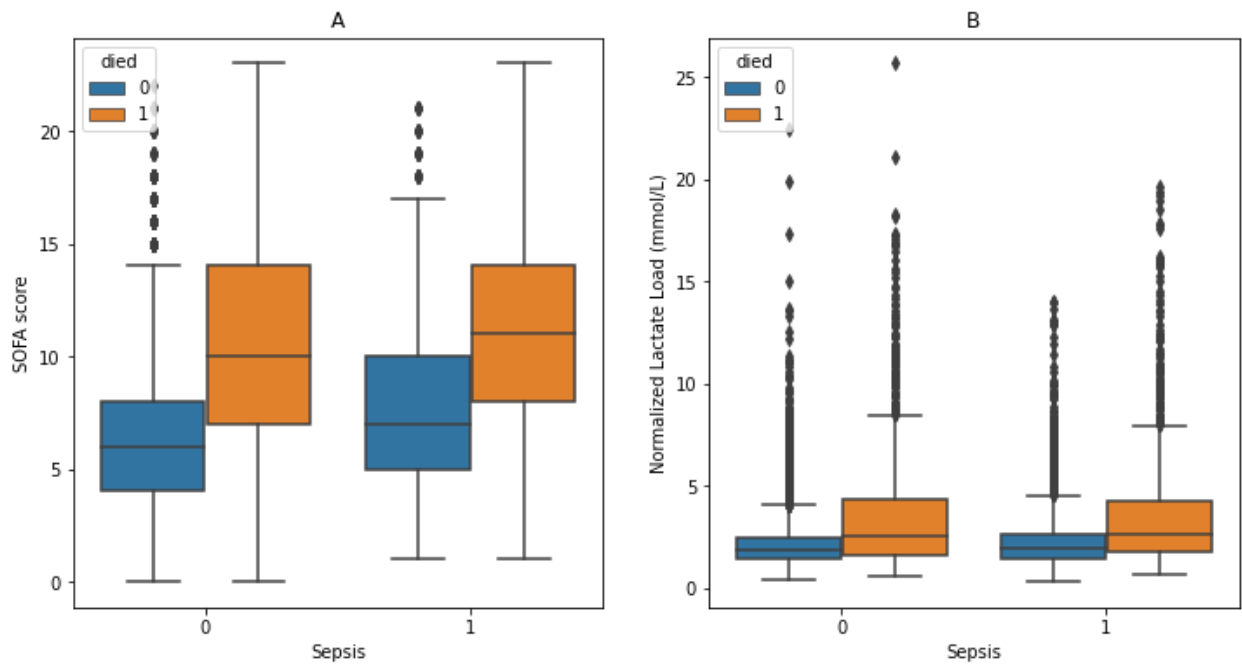


Table 2: Performance of normalized lactate load, maximum lactate, and mean lactate in predicting 28-day mortality

	All Patients	Sepsis Patients	Non-Sepsis Patients
Normalized Lactate Load	0.661	0.663	0.653
Maximum Lactate	0.633	0.638	0.625
Mean Lactate	0.649	0.653	0.64

**Figure 1: Diagram describing the calculation of lactate load and normalized lactate load**

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**Figure 2: Flowchart showing a step-by-step selection of patients included in the study**

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**Table 3: AUCs of normalized lactate load in patients with different number of lactate measurements**

This table was not reproduced as it is part of the sensitivity analysis which used the excluded cohort.