

SUPPLEMENTARY RESULTS

Article title: Sequential Organ Failure Assessment (SOFA) score for predicting mortality in patients with sepsis in Vietnamese intensive care units: A multicentre, cross-sectional study

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Table S1. Hospital and intensive care unit characteristics according to hospital survivability of patients with sepsis

Variable	All cases n=252	Survived n=151	Died n=101	p ^a
Participating hospital, no. (%)				NA
115 People's	25 (9.9)	6 (4.0)	19 (18.8)	
Bach Mai	26 (10.3)	14 (9.3)	12 (11.9)	
Bai Chay	14 (5.6)	10 (6.6)	4 (4.0)	
Can Tho	7 (2.8)	1 (0.7)	6 (5.9)	
Cho Ray	41 (16.3)	19 (12.6)	22 (21.8)	
Da Nang	12 (4.8)	6 (4.0)	6 (5.9)	
Dong Da	9 (3.6)	6 (4.0)	3 (3.0)	
Hanoi Medical University	12 (4.8)	6 (4.0)	6 (5.9)	
Hue	39 (15.5)	26 (17.2)	13 (12.9)	

Saint Paul	9 (3.6)	9 (6.0)	0 (0.0)	
Thai Nguyen	2 (0.8)	1 (0.7)	1 (1.0)	
Thanh Nhan	1 (0.4)	0 (0.0)	1 (1.0)	
Vietnam–Czechoslovakia Friendship	48 (19.0)	40 (26.5)	8 (7.9)	
Vinmec Times City International	7 (2.8)	7 (4.6)	0 (0.0)	
Hospital characteristics				
Type of hospital, no. (%)				NA
Rural	0 (0.0)	0 (0.0)	0 (0.0)	
Urban	252 (100)	151 (100)	101 (100)	
University affiliation, no. (%)				<0.001
No	153 (60.7)	105 (69.5)	48 (47.5)	
Yes	99 (39.3)	46 (30.5)	53 (52.5)	
ICU characteristics				
Nature of ICU, no. (%)				NA
Open	0 (0.0)	0 (0.0)	0 (0.0)	
Closed	252 (100)	151 (100)	101 (100)	
Type of ICU, no. (%)				0.589
Medical	110 (43.7)	68 (45.0)	42 (41.6)	
Surgical	0 (0.0)	0 (0.0)	0 (0.0)	
Mixed	142 (56.3)	83 (55.0)	59 (58.4)	
Nurse to patient ratio, no. (%)				0.079
1 or more nurses : 1 patient	7 (2.8)	7 (4.6)	0 (0.0)	
1 nurse : 2 patients	187 (74.2)	111 (73.5)	76 (75.2)	
1 nurse : 3 patients	0 (0.0)	0 (0.0)	0 (0.0)	
1 nurse : 4 or more patients	58 (23.0)	33 (21.9)	25 (24.8)	
Intensivist to patient ratio, no. (%)				0.446
1 intensivist : 5 or fewer patients	165 (65.5)	96 (63.6)	69 (68.3)	
1 intensivist : 6 to 8 patients	75 (29.8)	49 (32.5)	26 (25.7)	
1 intensivist : 9 to 11 patients	0 (0.0)	0 (0.0)	0 (0.0)	
1 intensivist : 12 or more patients	12 (4.8)	6 (4.0)	6 (5.9)	
Training programme in ICU, no. (%)				0.010
No	50 (19.8)	22 (14.6)	28 (27.7)	
Yes	202 (80.2)	129 (85.4)	73 (72.3)	

^aComparison between the patients who survived and died using the Chi-squared test; *Fisher's exact test; **Mann–Whitney U test.

Abbreviations: ICU, intensive care unit; NA, not available; no., number.

Table S2. Baseline characteristics according to hospital survivability of patients with sepsis

Variable	All cases n=252	Survived n=151	Died n=101	p ^a
Age (year), median (IQR)	65 (52-	65 (53-76)	65 (52-78)	0.810**

	76.75)			
Age (year), no. (%)				0.865*
< 20	3 (1.2)	2 (1.3)	1 (1.0)	
20 - 39	19 (7.5)	10 (6.6)	9 (8.9)	
40 - 59	74 (29.4)	43 (28.5)	31 (30.7)	
≥ 60	156 (61.9)	96 (63.6)	60 (59.4)	
Sex (male), no. (%)	162 (64.3)	93 (61.6)	69 (68.3)	0.275
Collection batch, no. (%)				0.007
Collection 1 (Jan)	80 (31.7)	58 (38.4)	22 (21.8)	
Collection 2 (April)	62 (24.6)	27 (17.9)	35 (34.7)	
Collection 3 (July)	54 (21.4)	32 (21.2)	22 (21.8)	
Collection 4 (Oct)	56 (22.2)	34 (22.5)	22 (21.8)	
Admission type, no. (%)				0.195*
Medical	236 (93.7)	138 (91.4)	98 (97.0)	
Elective surgical	2 (0.8)	2 (1.3)	0 (0.0)	
Unscheduled surgical	14 (5.6)	11 (7.3)	3 (3.0)	
Admission source, no. (%)				0.505*
Emergency department	138 (54.8)	87 (57.6)	51 (50.5)	
Operating room	4 (1.6)	3 (2.0)	1 (1.0)	
General wards	56 (22.2)	33 (21.9)	23 (22.8)	
Other ICUs or HDU	16 (6.3)	10 (6.6)	6 (5.9)	
Inter-hospital transfer	37 (14.7)	18 (11.9)	19 (18.8)	
Others	1 (0.4)	0 (0.0)	1 (1.0)	
Comorbidities, no. (%)				
Cardiovascular disease	78 (31.0)	41 (27.2)	37 (36.6)	0.111
Chronic lung disease	30 (11.9)	18 (11.9)	12 (1.9)	0.992
Chronic neurological disease	36 (14.3)	28 (18.5)	8 (7.9)	0.018
Chronic kidney disease	23 (9.1)	14 (9.3)	9 (8.9)	0.922
Peptic ulcer disease	9 (3.6)	5 (3.3)	4 (4.0)	>0.999*
Chronic liver disease	27 (10.7)	14 (9.3)	13 (12.9)	0.365
Diabetes mellitus	67 (26.6)	40 (26.5)	27 (26.7)	0.966
HIV infection	0 (0.0)	0 (0.0)	0 (0.0)	NA
Connective tissue disease	3 (1.2)	2 (1.3)	1 (1.0)	>0.999*
Immunosuppression	10 (4.0)	7 (4.6)	3 (3.0)	0.744*
Haematological malignancies	5 (2.0)	3 (2.0)	2 (2.0)	>0.999*
Solid malignant tumours	12 (4.8)	6 (4.0)	6 (5.9)	0.551*

^aComparison between the patients who survived and died using the Chi-squared test; *Fisher's exact test; **Mann-Whitney U test.

Abbreviations: **HIV**, human immunodeficiency virus; **ICU**, intensive care unit; **IQR**, interquartile range; **NA**, not available; **no.**, number.

Table S3. Clinical and laboratory characteristics and severity of illness according to hospital survivability of patients with sepsis

Variable	All cases	Survived	Died	p ^a
Vital signs (on admission into ICU)				
GCS, median (IQR)	13 (9-15)	14 (10-15)	10 (8-14)	<0.001 ^{**}
HR (beats per min), median (IQR)	110 (95.25-125.75)	110 (92-125)	110 (100-129.5)	0.083 ^{**}
Temperature (°C), mean (SD)	37.79 (1.01)	37.80 (1.08)	37.77 (0.91)	0.871 ^{**}
MBP (mmHg), mean(SD)	75.82 (22.08)	79.75 (22.88)	69.93 (19.51)	0.002 ^{**}
SBP (mmHg), mean (SD)	106.45 (29.96)	111.39 (29.44)	99.07 (29.35)	0.004 ^{**}
RR (breaths per min), median (IQR)	25 (22-30)	25 (22-30)	25 (20-30)	0.693 ^{**}
Blood investigations				
Total WBC (x10 ⁹ /L), mean (SD)	15.73 (9.20)	15.63 (8.67)	15.88 (9.98)	0.914 ^{**}
PLT (x10 ⁹ /L), mean (SD)	185.98 (137.85)	200.71 (129.67)	163.95 (147.15)	0.002 ^{**}
Hb (g/dL), mean (SD)	11.14 (2.59)	11.36 (2.68)	10.82 (2.44)	0.088 ^{**}
Hct (%), mean (SD)	34.31 (7.75)	35.08 (7.92)	33.17 (7.38)	0.031 ^{**}
K ⁺ (mmol/L), mean (SD)	3.89 (0.79)	3.90 (0.80)	3.87 (0.77)	0.865 ^{**}
Na ⁺ (mmol/L), mean (SD)	136.05 (8.24)	135.62 (8.81)	136.69 (7.80)	0.068 ^{**}
Creatinine (μmol/L), mean (SD)	187.85 (151.92)	186.15 (171.60)	190.38 (117.27)	0.030 ^{**}
Bilirubin (μmol/l), mean (SD)	32.80 (61.49)	31.74 (72.67)	34.35 (40.09)	0.007 ^{**}
pH, mean (SD)	7.37 (0.50)	7.41 (0.64)	7.32 (0.14)	0.004 ^{**}
PaO ₂ (mmHg), mean (SD)	116.17 (74.28)	110.23 (56.25)	124.73 (94.07)	0.665 ^{**}
FiO ₂ , mean (SD)	0.50 (0.22)	0.44 (0.18)	0.58 (0.24)	<0.001 ^{**}
PaO ₂ /FiO ₂ ratio, mean (SD)	262.48 (149.58)	281.52 (149.39)	235.26 (146.32)	0.003 ^{**}
Severity of illness scores				
qSOFA, median (IQR)	2 (1-2)	2 (1-2)	2 (2-3)	0.001 ^{**}
qSOFA, no. (%)				0.055
0 - 1	69 (27.4)	48 (31.8)	21 (20.8)	
2 - 3	183 (72.6)	103 (68.2)	80 (79.2)	
SIRS, median (IQR)	3 (2-4)	3 (2-4)	3 (2-4)	0.937 ^{**}
SOFA, median (IQR)	7 (4.75-10)	6 (4-9)	9 (6-12)	<0.001 ^{**}
SOFA, no. (%)				<0.001
0 - 1	0 (0.0)	0 (0.0)	0 (0.0)	

2 - 3	46 (18.4)	33 (22.1)	13 (12.9)	
4 - 5	36 (14.4)	28 (18.8)	8 (7.9)	
6 - 7	58 (23.2)	43 (28.9)	15 (14.9)	
8 - 9	32 (12.8)	16 (10.7)	16 (15.8)	
10 - 11	38 (15.2)	20 (13.4)	18 (17.8)	
12 - 14	29 (11.6)	8 (5.4)	21 (20.8)	
> 14	11 (4.4)	1 (0.7)	10 (9.9)	
SOFA, no. (%)				<0.001
< 8	140 (56.0)	113 (68.1)	27 (32.1)	
≥ 8 ^b	110 (44.0)	53 (31.9)	57 (67.9)	
APACHE II, median (IQR)	18 (13-24)	15 (12-21)	22 (16-27)	<0.001 ^{**}
APACHE II, no. (%)				<0.001
0 - 4	3 (1.2)	3 (2.0)	0 (0.0)	
5 - 9	22 (8.7)	16 (10.6)	6 (5.9)	
10 - 14	61 (24.2)	50 (33.1)	11 (10.9)	
15 - 19	52 (20.6)	33 (21.9)	19 (18.8)	
20 - 24	58 (23.0)	27 (17.9)	31 (30.7)	
25 - 29	28 (11.1)	9 (6.0)	19 (18.8)	
30 - 34	19 (7.5)	10 (6.6)	9 (8.9)	
> 34	9 (3.6)	3 (2.0)	6 (5.9)	
APACHE II, no. (%)				<0.001
< 21	148 (58.7)	115 (68.5)	33 (39.3)	
≥ 21 ^b	104 (41.3)	53 (31.5)	51 (60.7)	
Septic Shock	74 (29.4)	35 (23.2)	39 (38.6)	0.008

^aComparison between the patients who survived and died using the Chi-squared test; ^{*}Fisher's exact test;

^{**}Mann-Whitney U test.

^b The cut-off value of the SOFA or APACHE II score, which was determined by receiver operator characteristic curve analysis, for predicting death in the hospital.

Abbreviations: **APACHE II:** Acute Physiology and Chronic Health Evaluation II Score; **FiO₂:** fraction of inspired oxygen; **GCS:** Glasgow Coma Scale; **Hb:** haemoglobin; **HR:** heart rate; **ICU:** intensive care unit; **IQR:** interquartile range; **MBP:** mean blood pressure; **no.:** number; **PaO₂:** partial pressure of oxygen in the arterial blood; **PLT:** platelet count; **RR:** respiratory rate; **SD:** standard deviation; **SOFA:** Sequential Organ Failure Assessment Score; **WBC:** white blood cell.

Table S4. Sites of infection and microbiology according to hospital survivability of patients with sepsis

Variable	All cases n=252	Survived n=151	Died n=101	p ^a
Site of Infection				
Respiratory, no. (%)	143 (56.7)	82 (54.3)	61 (60.4)	0.339
Urinary tract, no. (%)	37 (14.7)	30 (19.9)	7 (6.9)	0.004
Abdominal, no. (%)	61 (24.2)	34 (22.5)	27 (26.7)	0.444
Neurological, no. (%)	12 (4.8)	8 (5.3)	4 (4.0)	0.767 [*]

Bones or joints, no. (%)	2 (0.8)	2 (1.3)	0 (0.0)	0.518*
Skin or cutaneous sites, no. (%)	19 (7.5)	7 (4.6)	12 (11.9)	0.033
Intravascular catheter, no. (%)	1 (0.4)	1 (0.7)	0 (0.0)	>0.999*
Infective endocarditis, no. (%)	1 (0.4)	0 (0.0)	1 (1.0)	0.401*
Primary bacteraemia, no. (%)	7 (2.8)	5 (3.3)	2 (2.0)	0.705*
Systemic, no. (%)	6 (2.4)	4 (2.6)	2 (2.0)	>0.999*
Microbiology				
No pathogens detected, no. (%)	67 (26.6)	47 (31.1)	20 (19.8)	0.046
Gram negative bacteria, no. (%)	156 (61.9)	88 (58.3)	68 (67.3)	0.147
<i>Klebsiella pneumonia</i>	27 (10.7)	16 (10.6)	11 (10.9)	0.941
<i>Acinetobacter baumannii</i>	45 (17.9)	21 (13.9)	24 (23.8)	0.045
<i>Escherichia coli</i>	44 (17.5)	26 (17.2)	18 (17.8)	0.902
<i>Pseudomonas aeruginosa</i>	24 (9.5)	17 (11.3)	7 (6.9)	0.251
<i>Stenotrophomonas maltophilia</i>	2 (0.8)	0 (0.0)	2 (2.0)	0.160*
<i>Proteus species</i>	47 (18.7)	25 (16.6)	22 (21.8)	0.297
<i>Enterobacter cloacae</i>	3 (1.2)	3 (2.0)	0 (0.0)	0.277*
<i>Bulkholderia pseudomallei</i>	1 (0.4)	0 (0.0)	1 (1.0)	0.221*
<i>Others</i>	0 (0.0)	0 (0.0)	0 (0.0)	NA
Gram positive bacteria, no. (%)	34 (13.5)	22 (14.6)	12 (11.9)	0.540
<i>Enterococcus</i>	5 (2.0)	5 (3.3)	0 (0.0)	0.085*
<i>MSSA</i>	5 (2.0)	3 (2.0)	2 (2.0)	>0.999*
<i>MRSA</i>	10 (4.0)	6 (4.0)	4 (4.0)	>0.999*
<i>Other Streptococcus species</i>	12 (4.8)	6 (4.0)	6 (5.9)	0.551*
<i>Streptococcus pneumonia</i>	2 (0.8)	2 (1.3)	0 (0.0)	0.518*
Fungi, no. (%)	7 (2.8)	4 (2.6)	3 (3.0)	>0.999
<i>Candida species</i>	7 (2.8)	4 (2.6)	3 (3.0)	>0.999*
<i>Aspergillus species</i>	0 (0.0)	0 (0.0)	0 (0.0)	NA
<i>Others</i>	0 (0.0)	0 (0.0)	0 (0.0)	NA
Viruses, no. (%)	2 (0.8)	0 (0.0)	2 (2.0)	0.160*
<i>Influenza</i>	1 (0.4)	0 (0.0)	1 (1.0)	0.401*
<i>Dengue</i>	1 (0.4)	0 (0.0)	1 (1.0)	0.401*
<i>Others</i>	0 (0.0)	0 (0.0)	0 (0.0)	NA
Other pathogens, no. (%)				
<i>Anaerobes</i>	0 (0.0)	0 (0.0)	0 (0.0)	NA
<i>Mycobacterium tuberculosis</i>	4 (1.6)	3 (2.0)	1 (1.0)	0.651*
<i>Malaria</i>	0 (0.0)	0 (0.0)	0 (0.0)	NA

*Comparison between the patients who survived and died using the Chi-squared test; *Fisher's exact test; **Mann-Whitney U test.

Abbreviations: **MRSA:** methicillin-resistant *Staphylococcus aureus*; **MSSA:** methicillin-susceptible *Staphylococcus aureus*; **NA,** not available; **no.,** number.

Table S5. Completion of sepsis bundle elements according to the hospital survivability of patients with sepsis

Variable	All cases n=252	Survived n=151	Died n=101	p ^a
Timing of antibiotics administration				
Performed within 24 hours, no. (%)	n=225	n=141	n=84	0.348
0-60 minutes	173 (76.9)	109 (77.3)	64 (76.2)	
61-120 minutes	21 (9.3)	13 (9.2)	8 (9.5)	
121-180 minutes	14 (6.2)	11 (7.8)	3 (3.6)	
>180 minutes	17 (7.6)	8 (5.7)	9 (10.7)	
Not performed within 24 hours, no. (%)	0 (0.0)	0 (0.0)	0 (0.0)	NA
Timing of antibiotics administration, median (IQR), minutes	30 (11-60)	35 (13.5-60)	30 (10-60)	0.794 ^{**}
Timing of obtaining blood cultures				
Performed within 24 hours, no. (%)	n=197	n=114	n=83	0.838
0-60 minutes	135 (68.5)	77 (67.5)	58 (69.9)	
61-120 minutes	14 (7.1)	7 (6.1)	7 (8.4)	
121-180 minutes	10 (5.1)	6 (5.3)	4 (4.8)	
>180 minutes	38 (19.3)	24 (21.1)	14 (16.9)	
Not performed within 24 hours, no. (%)	0 (0.0)	0 (0.0)	0 (0.0)	NA
Timing of obtaining blood cultures, median (IQR), minutes	30.0 (15-114.5)	30 (14-130.5)	30 (15-90)	0.493 ^{**}
Timing of obtaining lactate measurement				
Performed within 24 hours, no. (%)	n=198	n=121	n=77	0.790 [*]
0-60 minutes	141 (71.2)	85 (70.2)	56 (72.7)	
61-120 minutes	10 (5.1)	6 (5.0)	4 (5.2)	
121-180 minutes	6 (3.0)	5 (4.1)	1 (1.3)	
>180 minutes	41 (20.7)	25 (20.7)	16 (20.8)	
Not performed within 24 hours, no. (%)	0 (0.0)	0 (0.0)	0 (0.0)	NA
Timing of obtaining lactate measurement, median (IQR), minutes	30 (10-92)	30 (10-139.5)	30 (10-75.5)	0.583 ^{**}

^aComparison between the patients who survived and died using the Chi-squared test; *Fisher's exact test;^{**}Mann-Whitney U test.Abbreviations: **IQR:** interquartile range; **NA,** not available; **no.:** number.

Table S6. Completion of the sepsis bundle of care and the initial administration of antibiotics according to the hospital survivability of patients with sepsis

Variable	All cases n=252	Survived n=151	Died n=101	p ^a
Completion of the sepsis bundle within 1 hour, no. (%), n=241	87 (36.1)	53 (36.3)	34 (35.8)	0.936
Completion of the initial administration of antibiotics within 1 hour, no. (%), n=241	173 (71.8)	109 (74.7)	64 (63.4)	0.219
Permutations of the completed elements within 1 hour, no. (%)	n=241	n=146	n=95	0.196
No elements completed	20 (8.3)	12 (8.2)	8 (8.4)	
Antibiotics only	44 (18.3)	30 (20.5)	14 (14.7)	
Blood cultures only	13 (5.4)	9 (6.2)	4 (4.2)	
Lactate only	23 (9.5)	11 (7.5)	12 (12.6)	
Antibiotics + Lactate	17 (7.1)	14 (9.6)	3 (3.2)	
Antibiotics + Blood cultures	25 (10.4)	12 (8.2)	13 (13.7)	
Blood cultures + Lactate	12 (5.0)	5 (3.4)	7 (7.4)	
Antibiotics + Blood cultures + Lactate	87 (36.1)	53 (36.3)	34 (35.8)	
Completion of the sepsis bundle within 3 hours, no. (%), n=241	108 (44.8)	66 (45.2)	42 (44.2)	0.879
Completion of the initial administration of antibiotics within 3 hours, no. (%), n=241	205 (85.1)	131 (89.7)	74 (77.9)	0.012
Permutation of the completed elements of 3-hour sepsis bundle, no. (%)	n=241	n=146	n=95	0.028
No elements completed	8 (3.3)	3 (2.1)	5 (5.3)	
Antibiotics only	37 (15.4)	28 (19.2)	9 (9.5)	
Blood cultures only	5 (2.1)	2 (1.4)	3 (3.2)	
Lactate only	16 (6.6)	8 (5.5)	8 (8.4)	
Antibiotics + Lactate	24 (10.0)	19 (13.0)	5 (5.3)	
Antibiotics + Blood cultures	36 (14.9)	18 (12.3)	18 (18.9)	
Blood cultures + Lactate	7 (2.9)	2 (1.4)	5 (5.3)	
Antibiotics + Blood cultures + Lactate	108 (44.8)	66 (45.2)	42 (44.2)	

^aComparison between the patients who survived and died using the Chi-squared test; *Fisher's exact test; **Mann-Whitney U test.

Abbreviations: **no.**: number.

Table S7. Life-sustaining treatments during ICU stay and outcomes according to hospital survivability of patients with sepsis

Variable	All cases n=252	Survived n=151	Died n=101	P
Life-sustaining treatments during ICU stay				
Respiratory support, no. (%) and median (IQR), days				
Mechanical ventilation	173/251 (68.9)	82/150 (54.7)	91/101 (90.1)	<0.001
Duration of mechanical ventilation	8 (4-15)	9 (4-15)	7(3-14)	0.153**
Non-invasive ventilation	20/251 (8.0)	13/150 (8.7)	7/101 (6.9)	0.618
Duration of non-invasive ventilation	2 (2-3.75)	2 (1-2)	5 (2-7)	0.004**
High-flow nasal oxygen	38/251 (15.1)	29/150 (19.3)	9/101 (8.9)	0.024
Duration of high-flow nasal oxygen	2 (1-3)	2 (1-3)	2 (1-3)	>0.999**
Additional ICU support, no. (%)				
Vasopressors/inotropes	163 (64.7)	82 (54.3)	81 (80.2)	<0.001
Renal replacement therapy	101/251 (40.2)	43/150 (28.7)	58/101 (57.4)	<0.001
Red blood cell transfusion	93/251 (37.1)	48/150 (32.0)	45/101 (44.6)	0.043
Platelet transfusion	50/251 (19.9)	20/150 (13.3)	30/101 (29.7)	0.001
Fresh frozen plasma transfusion	58/251 (23.1)	28/150 (18.7)	30/101 (29.7)	0.042
Surgical source control	25/251 (10.0)	19/150 (12.7)	6/101 (5.9)	0.081*
Non-surgical source control	78/251 (31.1)	54/150 (36.0)	24/101 (23.8)	0.040
Length of of surgical source control, median (IQR), minutes	295.0 (190.0-637.5)	290.0 (105.0-630.0)	430.0 (270.0-1587.5)	0.241**
Length of of surgical source control, n (%)	n=24	n=19	n=5	0.208*
<12 hours	23 (95.8)	19 (100)	4 (80.0)	
12-24 hours	1 (4.2)	0 (0.0)	1 (20.0)	
>24 hours	0 (0.0)	0 (0.0)	0 (0.0)	
Outcomes				
Patient status, no. (%)				<0.001*

Alive upon current hospital discharge	150 (59.5)	150 (99.3)	0 (0.0)	
Alive upon discharge from current ICU stay, but died in current hospital stay	17 (6.7)	0 (0.0)	17 (16.8)	
Alive upon discharge from current ICU stay, but still in current hospital stay after 90 days	1 (0.4)	1 (0.7)	0 (0.0)	
Still in current ICU stay after 90 days	0 (0.0)	0 (0.0)	0 (0.0)	
Died in current ICU stay	84 (33.3)	0 (0.0)	84 (83.2)	
Length of stay, median days (IQR)				
Hospital	16 (10-25)	17 (11-24.25)	13 (7-26)	0.027**
ICU	10 (6-18)	10.5 (6-17)	10 (5-21)	0.740**

^aComparison between the patients who survived and died using the Chi-squared test; *Fisher's exact test;

**Mann–Whitney U test.

Abbreviations: **ICU**: intensive care unit; **IQR**: interquartile range; **no.**: number.

Table S8. Hospital and intensive care unit characteristics according to intensive care unit survivability of patients with sepsis

Variable	All cases n=252	Survived n=168	Died n=84	p ^a
Participating hospital, no. (%)				NA
115 People's	25 (9.9)	7 (4.2)	18 (21.4)	
Bach Mai	26 (10.3)	16 (9.5)	10 (11.9)	
Bai Chay	14 (5.6)	10 (6.0)	4 (4.8)	
Can Tho	7 (2.8)	4 (2.4)	3 (3.6)	
Cho Ray	41 (16.3)	22 (13.1)	19 (22.6)	
Da Nang	12 (4.8)	6 (3.6)	6 (7.1)	
Dong Da	9 (3.6)	6 (3.6)	3 (3.6)	
Hanoi Medical University	12 (4.8)	6 (3.6)	6 (7.1)	
Hue	39 (15.5)	31 (18.5)	8 (9.5)	
Saint Paul	9 (3.6)	9 (5.4)	0 (0.0)	
Thai Nguyen	2 (0.8)	1 (0.6)	1 (1.2)	
Thanh Nhan	1 (0.4)	1 (0.6)	0 (0.0)	
Vietnam–Czechoslovakia Friendship	48 (19.0)	42 (25.0)	6 (7.1)	
Vinmec Times City International	7 (2.8)	7 (4.2)	0 (0.0)	
Hospital characteristics				
Type of hospital, no. (%)				NA

Rural	0 (0.0)	0 (0.0)	0 (0.0)	
Urban	252 (100)	168 (100)	84 (100)	
University affiliation, no. (%)				0.003
No	153 (60.7)	113 (67.3)	40 (47.6)	
Yes	99 (39.3)	55 (32.7)	44 (52.4)	
ICU characteristics				
Nature of ICU, no. (%)				NA
Open	0 (0.0)	0 (0.0)	0 (0.0)	
Closed	252 (100)	168 (100)	84 (100)	
Type of ICU, no. (%)				0.857
Medical	110 (43.7)	74 (44.0)	36 (42.9)	
Surgical	0 (0.0)	0 (0.0)	0 (0.0)	
Mixed	142 (56.3)	94 (56.0)	48 (57.1)	
Nurse to patient ratio, no. (%)				0.124
1 or more nurses : 1 patient	7 (2.8)	7 (4.2)	0 (0.0)	
1 nurse : 2 patients	187 (74.2)	120 (71.4)	67 (79.8)	
1 nurse : 3 patients	0 (0.0)	0 (0.0)	0 (0.0)	
1 nurse : 4 or more patients	58 (23.0)	41 (24.4)	17 (20.2)	
Intensivist to patient ratio, no. (%)				0.077
1 intensivist : 5 or fewer patients	165 (65.5)	105 (62.5)	60 (71.4)	
1 intensivist : 6 to 8 patients	75 (29.8)	57 (33.9)	18 (21.4)	
1 intensivist : 9 to 11 patients	0 (0.0)	0 (0.0)	0 (0.0)	
1 intensivist : 12 to 14 patients	12 (4.8)	6 (3.6)	6 (7.1)	
Training programme in ICU, no. (%)				0.014
No	50 (19.8)	26 (15.5)	24 (28.6)	
Yes	202 (80.2)	142 (84.5)	60 (71.4)	

^aComparison between the patients who survived and died using the Chi-squared test; *Fisher's exact test; **Mann-Whitney U test.

Abbreviations: ICU, intensive care unit; NA, not available; no., number.

Table S9. Baseline characteristics according to intensive care unit survivability of patients with sepsis

Variable	All cases n=252	Survived n=168	Died n=84	p ^a
Age (year), median (IQR)	65 (52-76.75)	65 (52-76)	65 (52-77)	0.971 ^{**}
Age (year), no. (%)				0.844 [*]
< 20	3 (1.2)	2 (1.2)	1 (1.2)	
20 - 39	19 (7.5)	11 (6.5)	8 (9.5)	
40 - 59	74 (29.4)	49 (29.2)	25 (29.8)	
≥ 60	156 (61.9)	106 (63.1)	50 (59.5)	
Sex (male), no. (%)	162 (64.3)	104 (61.9)	58 (69.0)	0.265

Collection batch, no. (%)				0.034
Collection 1 (Jan)	80 (31.7)	61 (36.3)	19 (22.6)	
Collection 2 (April)	62 (24.6)	33 (19.6)	29 (34.5)	
Collection 3 (July)	54 (21.4)	35 (20.8)	19 (22.6)	
Collection 4 (Oct)	56 (22.2)	39 (23.2)	17 (20.2)	
Admission type, no. (%)				0.393*
Medical	236 (93.7)	155 (92.3)	81 (96.4)	
Elective surgical	2 (0.8)	2 (1.2)	0 (0.0)	
Unscheduled surgical	14 (5.6)	11 (6.5)	3 (3.6)	
Admission source, no. (%)				0.351*
Emergency department	138 (54.8)	94 (56.0)	44 (52.4)	
Operating room	4 (1.6)	3 (1.8)	1 (1.2)	
General wards	56 (22.2)	39 (23.2)	17 (20.2)	
Other ICUs or HDU	16 (6.3)	12 (7.1)	4 (4.8)	
Inter-hospital transfer	37 (14.7)	20 (11.9)	17 (20.2)	
Others	1 (0.4)	0 (0.0)	1 (1.2)	
Comorbidities, no. (%)				
Cardiovascular disease	78 (31.0)	47 (28.0)	31 (36.9)	0.148
Chronic lung disease	30 (11.9)	21 (12.5)	9 (10.7)	0.680
Chronic neurological disease	36 (14.3)	28 (16.7)	8 (9.5)	0.127
Chronic kidney disease	23 (9.1)	16 (9.5)	7 (8.3)	0.757
Peptic ulcer disease	9 (3.6)	6 (3.6)	3 (3.6)	>0.999*
Chronic liver disease	27 (10.7)	17 (10.1)	10 (11.9)	0.670
Diabetes mellitus	67 (26.6)	44 (26.2)	23 (27.4)	0.840
HIV infection	0 (0.0)	0 (0.0)	0 (0.0)	NA
Connective tissue disease	3 (1.2)	2 (1.2)	1 (1.2)	>0.999*
Immunosuppression	10 (4.0)	7 (4.2)	3 (3.6)	>0.999*
Haematological malignancies	5 (2.0)	3 (1.8)	2 (2.4)	>0.999*
Solid malignant tumours	12 (4.8)	6 (3.6)	6 (7.1)	0.222

^aComparison between the patients who survived and died using the Chi-squared test; *Fisher's exact test; **Mann–Whitney U test.

Abbreviations: **HIV**, human immunodeficiency virus; **ICU**, intensive care unit; **IQR**, interquartile range; **NA**, not available; **no.**, number.

Table S10. Clinical and laboratory characteristics and severity of illness according to intensive care unit survivability of patients with sepsis

Variable	All cases n=252	Survived n=168	Died n=84	p ^a
Vital signs (on admission into ICU)				
GCS, median (IQR)	13 (9-15)	14 (10-15)	10 (8-14)	<0.001**
HR (beats per min), median (IQR)	110 (95.25-125.75)	109 (92-121)	111.5 (100-130)	0.008**

Temperature (°C), mean (SD)	37.79 (1.01)	37.82 (1.07)	37.72 (0.88)	0.485**
MBP (mmHg), mean (SD)	75.82 (22.08)	78.95 (22.80)	69.54 (19.21)	0.001**
SBP (mmHg), mean (SD)	106.45 (29.96)	110.64 (29.48)	98.08 (29.33)	0.002**
RR (breaths per min), median (IQR)	25 (22-30)	25 (22-30)	25 (20.25-30)	>0.999**
Blood investigations				
Total WBC (x10 ⁹ /L), mean (SD)	15.73 (9.20)	15.70 (8.64)	15.79 (10.28)	0.941**
PLT (x10 ⁹ /L), mean (SD)	185.98 (137.85)	203.72 (131.99)	150.49 (143.17)	0.004**
Hb (g/dL), mean (SD)	11.14 (2.59)	11.33 (2.62)	10.77 (2.50)	0.104**
Hct (%), mean (SD)	34.31 (7.75)	34.85 (7.76)	33.24 (7.67)	0.122**
K ⁺ (mmol/L), mean (SD)	3.89 (0.79)	3.89 (0.80)	3.87 (0.77)	0.838**
Na ⁺ (mmol/L), mean (SD)	136.05 (8.24)	135.21 (8.72)	137.74 (6.92)	0.021**
Creatinine (μmol/L), mean (SD)	187.85 (151.92)	188.47 (169.24)	186.60 (110.29)	0.927**
Bilirubin (μmol/l), mean (SD)	32.80 (61.49)	31.40 (69.33)	35.52 (42.65)	0.629**
pH, mean (SD)	7.37 (0.50)	7.40 (0.61)	7.32 (0.13)	0.249**
PaO ₂ (mmHg), mean (SD)	116.17 (74.28)	111.80 (64.31)	124.49 (90.14)	0.206**
FiO ₂ , mean (SD)	0.50 (0.22)	0.45 (0.20)	0.57 (0.24)	<0.001**
PaO ₂ /FiO ₂ ratio, mean (SD)	262.48 (149.58)	273.45 (149.45)	241.73 (148.49)	0.116**
Severity of illness scores				
qSOFA, median (IQR)	2 (1-2)	2 (1-2)	2 (2-3)	0.001**
qSOFA, no. (%)				0.036
0 - 1	69 (27.4)	53 (31.5)	16 (19.0)	
2 - 3	183 (72.6)	115 (68.5)	68 (81.0)	
SIRS, median (IQR)	3 (2-4)	3 (3-3.75)	3 (2-4)	0.792**
SOFA, median (IQR)	7 (4.75-10)	6 (4-9)	10 (7-12.75)	<0.001**
SOFA, no. (%)				<0.001
0 - 1	0 (0.0)	0 (0.0)	0 (0.0)	
2 - 3	46 (18.4)	38 (22.9)	8 (9.5)	
4 - 5	36 (14.4)	29 (17.5)	7 (8.3)	
6 - 7	58 (23.2)	46 (27.7)	12 (14.3)	
8 - 9	32 (12.8)	20 (12.0)	12 (14.3)	
10 - 11	38 (15.2)	21 (12.7)	17 (20.2)	
12 - 14	29 (11.6)	9 (5.4)	20 (23.8)	

> 14	11 (4.4)	3 (1.8)	8 (9.5)	
SOFA, no. (%)				<0.001
< 10	172 (68.8)	120 (80.5)	52 (51.5)	
≥ 10 ^b	78 (31.2)	29 (19.5)	49 (48.5)	
APACHE II, median (IQR)	18 (13-24)	16 (12-22)	22 (16.25-27)	<0.001 ^{**}
APACHE II, no. (%)				<0.001
0 - 4	3 (1.2)	3 (1.8)	0 (0.0)	
5 - 9	22 (8.7)	17 (10.1)	5 (6.0)	
10 - 14	61 (24.2)	52 (31.0)	9 (10.7)	
15 - 19	52 (20.6)	36 (21.4)	16 (19.0)	
20 - 24	58 (23.0)	32 (19.0)	26 (31.0)	
25 - 29	28 (11.1)	11 (6.5)	17 (20.2)	
30 - 34	19 (7.5)	13 (7.7)	6 (7.1)	
> 34	9 (3.6)	4 (2.4)	5 (6.0)	
APACHE II, no. (%)				<0.001
< 19	129 (51.2)	97 (64.2)	32 (31.7)	
≥ 19 ^b	123 (48.8)	54 (35.8)	69 (68.3)	
Septic Shock	74 (29.4)	43 (25.6)	31 (36.9)	0.063

^aComparison between the patients who survived and died using the Chi-squared test; ^{*}Fisher's exact test;

^{**}Mann-Whitney U test.

^bThe cut-off value of the SOFA or APACHE II score, which was determined by receiver operator characteristic curve analysis, for predicting death in the intensive care unit.

Abbreviations: **APACHE II:** Acute Physiology and Chronic Health Evaluation II Score; **FiO₂:** fraction of inspired oxygen; **GCS:** Glasgow Coma Scale; **Hb:** haemoglobin; **HR:** heart rate; **ICU:** intensive care unit; **IQR:** interquartile range; **MBP:** mean blood pressure; **no.:** number; **PaO₂:** partial pressure of oxygen in the arterial blood; **PLT:** platelet count; **RR:** respiratory rate; **SD:** standard deviation; **SOFA:** Sequential Organ Failure Assessment Score; **WBC:** white blood cell.

Table S11. Sites of infection and microbiology according to intensive care unit survivability of patients with sepsis

Variable	All cases n=252	Survived n=168	Died n=84	p ^a
Site of Infection				
Respiratory, no. (%)	143 (56.7)	93 (55.4)	50 (59.5)	0.529
Urinary tract, no. (%)	37 (14.7)	31 (18.5)	6 (7.1)	0.017
Abdominal, no. (%)	61 (24.2)	37 (22.0)	24 (28.6)	0.253
Neurological, no. (%)	12 (4.8)	9 (5.4)	3 (3.6)	0.756 [*]
Bones or joints, no. (%)	2 (0.8)	2 (1.2)	0 (0.0)	0.554 [*]
Skin or cutaneous sites, no. (%)	19 (7.5)	9 (5.4)	10 (11.9)	0.063
Intravascular catheter, no. (%)	1 (0.4)	1 (0.6)	0 (0.0)	>0.999 [*]
Infective endocarditis, no. (%)	1 (0.4)	0 (0.0)	1 (1.2)	0.333 [*]
Primary bacteraemia, no. (%)	7 (2.8)	6 (3.6)	1 (1.2)	0.430 [*]

Systemic, no. (%)	6 (2.4)	4 (2.4)	2 (2.4)	>0.999*
Microbiology				
No pathogens detected, no. (%)	67 (26.6)	50 (29.8)	17 (20.2)	0.107
Gram negative bacteria, no. (%)	156 (61.9)	101 (60.1)	55 (65.5)	0.409
<i>Klebsiella pneumonia</i>	27 (10.7)	17 (10.1)	10 (11.9)	0.666
<i>Acinetobacter baumannii</i>	45 (17.9)	24 (14.3)	21 (25.0)	0.036
<i>Escherichia coli</i>	44 (17.5)	31 (18.5)	13 (15.5)	0.557
<i>Pseudomonas aeruginosa</i>	24 (9.5)	18 (10.7)	6 (7.1)	0.363
<i>Stenotrophomonas maltophilia</i>	2 (0.8)	1 (0.6)	1 (1.2)	>0.999*
<i>Proteus species</i>	47 (18.7)	30 (17.9)	17 (20.2)	0.647
<i>Enterobacter cloacae</i>	3 (1.2)	3 (1.8)	0 (0.0)	0.553*
<i>Bulkholderia pseudomallei</i>	1 (0.4)	1 (0.6)	0 (0.0)	>0.999
<i>Other</i>	0 (0.0)	0 (0.0)	0 (0.0)	NA
Gram positive bacteria, no. (%)	34 (13.5)	23 (13.7)	11 (13.1)	0.896
<i>Enterococcus</i>	5 (2.0)	5 (3.0)	0 (0.0)	0.173*
<i>MSSA</i>	5 (2.0)	3 (1.8)	2 (2.4)	>0.999*
<i>MRSA</i>	10 (4.0)	7 (4.2)	3 (3.6)	>0.999*
<i>Other Streptococcus species</i>	12 (4.8)	6 (3.6)	6 (7.1)	0.222*
<i>Streptococcus pneumonia</i>	2 (0.8)	2 (1.2)	0 (0.0)	0.554*
Fungi, no. (%)	7 (2.8)	4 (2.4)	3 (3.6)	0.689*
<i>Candida species</i>	7 (2.8)	4 (2.4)	3 (3.6)	0.689*
<i>Aspergillus species</i>	0 (0.0)	0 (0.0)	0 (0.0)	NA
<i>Others</i>	0 (0.0)	0 (0.0)	0 (0.0)	NA
Viruses, no. (%)	2 (0.8)	0 (0.0)	2 (2.4)	0.110*
<i>Influenza</i>	1 (0.4)	0 (0.0)	1 (1.2)	0.333*
<i>Others</i>	0 (0.0)	0 (0.0)	0 (0.0)	NA
<i>Dengue</i>	1 (0.4)	0	1 (1.2)	0.333*
Other pathogens, no. (%)				
<i>Anaerobes</i>	0 (0.0)	0 (0.0)	0 (0.0)	NA
<i>Mycobacterium tuberculosis</i>	4 (1.6)	3 (1.8)	1 (1.2)	>0.999*
<i>Malaria</i>	0 (0.0)	0 (0.0)	0 (0.0)	NA

*Comparison between the patients who survived and died using the Chi-squared test; *Fisher's exact test; **Mann-Whitney U test.

Abbreviations: **MRSA**: methicillin-resistant *Staphylococcus aureus*; **MSSA**: methicillin-susceptible *Staphylococcus aureus*; **NA**, not available; **no.**, number.

Table S12. Completion of sepsis bundle elements according to intensive care unit survivability of patients with sepsis

Variable	All cases n=252	Survived n=168	Died n=84	p ^a
Timing of antibiotics administration				
Performed within 24 hours, no. (%)				0.686

0-60 minutes	173 (76.9)	120 (77.4)	53 (75.7)	
61-120 minutes	21 (9.3)	14 (9.0)	7 (10.0)	
121-180 minutes	14 (6.2)	11 (7.1)	3 (4.3)	
>180 minutes	17 (7.6)	10 (6.5)	7 (10.0)	
Not performed within 24 hours, no. (%)	0 (0.0)	0 (0.0)	0 (0.0)	NA
Timing of antibiotics administration, median (IQR), minutes	30 (11-60)	35 (15-60)	30 (10-61.25)	0.590**
Timing of obtaining blood cultures				
Performed within 24 hours, no. (%)	n=197	n=128	n=69	0.545*
0-60 minutes	135 (68.5)	87 (68.0)	48 (69.6)	
61-120 minutes	14 (7.1)	7 (5.5)	7 (10.1)	
121-180 minutes	10 (5.1)	7 (5.5)	3 (4.3)	
>180 minutes	38 (19.3)	27 (21.1)	11 (15.9)	
Not performed within 24 hours, no. (%)	0 (0.0)	0 (0.0)	0 (0.0)	NA
Timing of obtaining blood cultures, median (IQR), minutes	30.0 (15-114.5)	30 (15-133.5)	30 (10-90)	0.371**
Timing of obtaining lactate measurement				
Performed within 24 hours, no. (%)	n=198	n=135	n=63	0.827*
0-60 minutes	141 (71.2)	95 (70.4)	46 (73.0)	
61-120 minutes	10 (5.1)	6 (4.4)	4 (6.3)	
121-180 minutes	6 (3.0)	5 (3.7)	1 (1.6)	
>180 minutes	41 (20.7)	29 (21.5)	12 (19.0)	
Not performed within 24 hours, no. (%)	0 (0.0)	0 (0.0)	0 (0.0)	NA
Timing of obtaining lactate measurement, median (IQR), minutes	30 (10-92)	30 (11-159)	30 (10-75)	0.381**

^aComparison between the patients who survived and died using the Chi-squared test; *Fisher's exact test;

**Mann-Whitney U test.

Abbreviations: **IQR**: interquartile range; **NA**, not available; **no.**: number.

Table S13. Completion of the sepsis bundle of care and the initial administration of antibiotics according to intensive care unit survivability of patients with sepsis

Variable	All cases n=252	Survived n=168	Died n=84	p ^a
Completion of the sepsis bundle within 1 hour, no. (%), n=241	87 (36.1)	59 (36.6)	28 (35.0)	0.802
Completion of the initial administration of antibiotics within 1 hour, no. (%), n=241	173 (71.8)	120 (74.5)	53 (66.3)	0.178

Permutations of the completed elements within 1 hour, no. (%)	n=241	n=161	n=80	0.311
No elements completed	20 (8.3)	13 (8.1)	7 (8.8)	
Antibiotics only	44 (18.3)	32 (19.9)	12 (15.0)	
Blood cultures only	13 (5.4)	9 (5.6)	4 (5.0)	
Lactate only	23 (9.5)	12 (7.5)	11 (13.8)	
Antibiotics + Lactate	17 (7.1)	15 (9.3)	2 (2.5)	
Antibiotics + Blood cultures	25 (10.4)	14 (8.7)	11 (13.8)	
Blood cultures + Lactate	12 (5.0)	7 (4.3)	5 (6.3)	
Antibiotics + Blood cultures + Lactate	87 (36.1)	59 (36.6)	28 (35.0)	
Completion of the sepsis bundle within 3 hours, no. (%), n=241	108 (44.8)	73 (45.3)	35 (43.8)	0.815
Completion of the initial administration of antibiotics within 3 hours, no. (%), n=241	205 (85.1)	143 (88.8)	62 (77.5)	0.020
Permutation of the completed elements of 3-hour sepsis bundle, no. (%)	n=241	n=161	n=80	0.089*
No elements completed	8 (3.3)	4 (2.5)	4 (5.0)	
Antibiotics only	37 (15.4)	29 (18.0)	8 (10.0)	
Blood cultures only	5 (2.1)	2 (1.2)	3 (3.8)	
Lactate only	16 (6.6)	9 (5.6)	7 (8.8)	
Antibiotics + Lactate	24 (10.0)	20 (12.4)	4 (5.0)	
Antibiotics + Blood cultures	36 (14.9)	21 (13.0)	15 (18.8)	
Blood cultures + Lactate	7 (2.9)	3 (1.9)	4 (5.0)	
Antibiotics + Blood cultures + Lactate	108 (44.8)	73 (45.3)	35 (43.8)	

*Comparison between the patients who survived and died using the Chi-squared test; *Fisher's exact test; **Mann-Whitney U test.

Abbreviations: **no.**: number.

Table S14. Life-sustaining treatments during ICU stay and outcomes according to intensive care unit survivability of patients with sepsis

Variable	All cases n=252	Survived n=168	Died n=84	p ^a
Life-sustaining treatments during ICU stay				
Respiratory support, no. (%) and median (IQR), days				
Mechanical ventilation	173/251 (68.9)	97/167 (58.1)	76/84 (90.5)	<0.001
Duration of mechanical	8 (4-15)	9 (4-15)	7 (3-15)	0.502**

ventilation				
Non-invasive ventilation	20/251 (8.0)	14 (8.4)	6 (7.1)	0.732
Duration of non-invasive ventilation	2 (2-3.75)	2 (1-2)	5 (3.5-11.25)	0.002**
High-flow nasal oxygen	38/251 (15.1)	33/167 (19.8)	5/84 (6.0)	0.004
Duration of high-flow nasal oxygen	2 (1-3)	2 (1-3)	3 (2.25-11.25)	0.146
Additional ICU support, no. (%)				
Vasopressors/inotropes	163 (64.7)	96 (57.1)	67 (79.8)	<0.001
Renal replacement therapy	101/251 (40.2)	48/167 (28.7)	43/84 (63.1)	<0.001
Red blood cell transfusion	93/251 (37.1)	55/167 (32.9)	38/84 (45.2)	0.057
Platelet transfusion	50/251 (19.9)	23/167 (13.8)	27/84 (32.1)	0.001
Fresh frozen plasma transfusion	58/251 (23.1)	32/167 (19.2)	26/84 (31.0)	0.037
Surgical source control	25/251 (10.0)	19/167 (11.4)	6/84 (7.1)	0.290
Non-surgical source control	78/251 (31.1)	59/167 (35.3)	19/84 (22.6)	0.040
Length of of surgical source control, median (IQR), minutes	290 (105-630)	290 (105-630)	430 (270-1587)	0.241**
Length of of surgical source control, n (%)	n=24	n=19	n=5	0.208
<12 hours	23 (95.8)	19 (100)	4 (80.0)	
12-24 hours	1 (4.2)	0 (0.0)	1 (20.0)	
>24 hours	0 (0.0)	0 (0.0)	0 (0.0)	
Outcomes				
Patient status, no. (%)				<0.001*
Alive upon current hospital discharge	150 (59.5)	150 (89.3)	0 (0.0)	
Alive upon discharge from current ICU stay, but died in current hospital stay	17 (6.7)	17 (10.1)	0 (0.0)	
Alive upon discharge from current ICU stay, but still in current hospital stay after 90 days	1 (0.4)	1 (0.6)	0 (0.0)	
Still in current ICU stay after 90 days	0 (0.0)	0 (0.0)	0 (0.0)	
Died in current ICU stay, no.	84 (33.3)	0 (0.0)	84 (100)	

(%)				
Mortality, no. (%)				
Hospital	101 (40.1)	17 (10.1)	84 (100)	<0.001
Length of stay, median days (IQR)				
Hospital	16 (10-25)	17 (11-26)	13 (6-22)	0.002**
ICU	10 (6-18)	10 (6-17)	10 (5-20.5)	0.688**

^aComparison between the patients who survived and died using the Chi-squared test; *Fisher's exact test;

**Mann–Whitney U test.

Abbreviations: ICU: intensive care unit; IQR: interquartile range; no.: number.

Table S15. Factors associated with hospital mortality in patients with sepsis: univariable regression analyses

Factors	Number of patients	OR	95.0% CI for OR		P
			Lower	Upper	
Participating hospital					
115 People's	25	Ref.			0.004
Bach Mai	26	0.271	0.082	0.898	0.033
Bai Chay	14	0.126	0.029	0.554	0.006
Can Tho	7	1.895	0.189	19.039	0.587
Cho Ray	41	0.366	0.121	1.103	0.074
Da Nang	12	0.316	0.074	1.356	0.121
Dong Da	9	0.158	0.030	0.832	0.030
Hanoi Medical University	12	0.316	0.074	1.356	0.121
Hue	39	0.158	0.051	0.491	0.001
Saint Paul	9	0.000	0.000	NA	0.999
Thai Nguyen	2	0.316	0.017	5.854	0.439
Thanh Nhan	1	510149957.2	0.000	NA	>0.999
Vietnam–Czechoslovakia Friendship	48	0.063	0.019	0.208	<0.001
Vinmec Times City International	7	0.000	0.000	NA	0.999
Hospital characteristics					
University affiliation					
No	153	Ref.			NA
Yes	99	2.520	1.495	4.248	0.001
ICU characteristics					
Type of ICU					
Medical	110	Ref.			NA
Mixed	142	1.151	0.692	1.915	0.589
Nurse to patient ratio					
1 nurse : 4 or more patients	58	Ref.			0.946
1 or more nurses : 1 patient	7	0.000	0.000	-	0.999

1 nurse : 2 patients	187	0.904	0.498	1.640	0.739
Intensivist to patient ratio					
1 intensivist : 5 or fewer patients	165	Ref.			0.449
1 intensivist : 6 to 8 patients	75	0.738	0.419	1.302	0.294
1 intensivist : 12 or more patients	12	1.391	0.430	4.497	0.581
Training programme in ICU					
No	50	Ref.			NA
Yes	202	0.445	0.237	0.833	0.011
Baseline characteristics					
Age (year)	252	1.001	0.986	1.016	0.921
Age (year) group					
< 20	3	Ref.			0.863
20 - 39	19	1.800	0.139	23.374	0.653
40 - 59	74	1.442	0.125	16.617	0.769
≥ 60	156	1.250	0.111	14.086	0.857
Sex (male)	162	1.345	0.790	2.290	0.275
Collection batch					
Collection 1 (Jan)	80	Ref.			0.008
Collection 2 (April)	62	3.418	1.694	6.896	0.001
Collection 3 (July)	54	1.812	0.872	3.768	0.111
Collection 4 (Oct)	56	1.706	0.825	3.529	0.150
Admission type					
Medical	236	Ref.			0.355
Elective surgical	2	0.000	0.000	NA	0.999
Unscheduled surgical	14	0.384	0.104	1.413	0.150
Admission source					
Emergency department	138	Ref.			0.714
Operating room	4	0.569	0.058	5.612	0.629
General wards	56	1.189	0.630	2.243	0.593
Other ICUs or HDU	16	1.024	0.351	2.983	0.966
Inter-hospital transfer	37	1.801	0.866	3.742	0.115
Others	1	2755810063	0.000	NA	>0.999
Comorbidities					
Cardiovascular disease	78	1.551	0.903	2.664	0.112
Chronic lung disease	30	0.996	0.458	2.169	0.992
Chronic neurological disease	36	0.378	0.165	0.867	0.022
Chronic kidney disease	23	0.957	0.398	2.304	0.922
Peptic ulcer disease	9	1.204	0.315	4.597	0.786
Chronic liver disease	27	1.446	0.649	3.220	0.367
Diabetes mellitus	67	1.012	0.573	1.790	0.966

Connective tissue disease	3	0.745	0.067	8.326	0.811
Immunosuppression	10	0.630	0.159	2.495	0.510
Haematological malignancies	5	0.997	0.164	6.073	0.997
Solid malignant tumours	12	1.526	0.478	4.873	0.475
Vital signs					
GCS	251	0.849	0.786	0.918	<0.001
HR (beats per min)	252	1.010	0.997	1.022	0.140
Temperature (°C)	252	0.975	0.760	1.252	0.845
MBP (mmHg)	252	0.978	0.965	0.991	0.001
SBP (mmHg)	252	0.986	0.977	0.995	0.002
RR (breaths per min)	252	0.987	0.944	1.031	0.555
Blood investigations					
Total WBC ($\times 10^9/L$)	252	1.003	0.976	1.031	0.833
PLT ($\times 10^9/L$)	252	0.998	0.996	1.000	0.040
Hb (g/dL)	251	0.922	0.835	1.018	0.109
Hct (%)	252	0.968	0.936	1.001	0.057
K ⁺ (mmol/L)	252	0.961	0.697	1.324	0.805
Na ⁺ (mmol/L)	252	1.016	0.985	1.048	0.313
Creatinine ($\mu\text{mol/L}$)	252	1.000	0.999	1.002	0.828
Bilirubin ($\mu\text{mol/l}$)	232	1.001	0.996	1.005	0.752
pH	248	0.045	0.005	0.389	0.005
PaO ₂ (mmHg)	244	1.003	0.999	1.006	0.142
FiO ₂	245	26.892	7.081	102.133	<0.001
PaO ₂ /FiO ₂ ratio	243	0.998	0.996	1.000	0.020
Severity of illness scores					
qSOFA	252	1.697	1.203	2.393	0.003
qSOFA					
0 - 1	69	Ref.			NA
2 - 3	183	1.775	0.984	3.203	0.057
SIRS	252	1.004	0.776	1.300	0.974
SOFA	250	1.219	1.130	1.315	<0.001
SOFA					
2 - 3	46	Ref.			<0.001
4 - 5	36	0.725	0.263	2.000	0.535
6 - 7	58	0.886	0.371	2.114	0.784
8 - 9	32	2.538	0.987	6.528	0.053
10 - 11	38	2.285	0.925	5.642	0.073
12 - 14	29	6.663	2.363	18.793	<0.001
> 14	11	25.385	2.947	218.685	0.003
SOFA					
< 8	140	Ref.			NA
≥ 8	110	4.173	2.440	7.137	<0.001

APACHE II	252	1.088	1.050	1.127	<0.001
APACHE II					
0 - 4	3	Ref.			<0.001
5 - 9	22	605807962.9	0.000	NA	0.999
10 - 14	61	355407338.2	0.000	NA	0.999
15 - 19	52	930129397.5	0.000	NA	0.999
20 - 24	58	1854819442	0.000	NA	0.999
25 - 29	28	3410474458	0.000	NA	0.999
30 - 34	19	1453939111	0.000	NA	0.999
> 34	9	3230975802	0.000	NA	0.999
APACHE II					<0.001
< 21	148	Ref.			NA
≥ 21	104	4.126	2.414	7.051	<0.001
Site of Infection					
Respiratory	143	1.283	0.769	2.140	0.339
Urinary tract	37	0.300	0.126	0.714	0.006
Abdominal	61	1.256	0.701	2.249	0.444
Neurological	12	0.737	0.216	2.516	0.626
Bones or joints	2	0.000	0.000	NA	0.999
Skin or cutaneous sites	19	2.774	1.053	7.309	0.039
Intravascular catheter	1	0.000	0.000	NA	1.000
Infective endocarditis	1	2439367045	0.000	NA	>0.999
Primary bacteraemia	7	0.590	0.112	3.101	0.533
Systemic	6	0.742	0.133	4.131	0.734
Microbiology					
Pathogens detection					
No pathogens detected	67	0.546	0.300	0.994	0.048
Gram negative bacteria	156	1.475	0.871	2.498	0.148
Gram positive bacteria	34	0.791	0.372	1.679	0.541
Fungi	7	1.125	0.246	5.137	0.879
Viruses	2	2464007117	0.000	NA	0.999
Other pathogens	4	0.493	0.051	4.810	0.543
Completion of sepsis bundle elements					
Timing of antibiotics administration					
0-60 minutes	173	Ref.			0.367
61-120 minutes	21	1.048	0.412	2.665	0.921
121-180 minutes	14	0.464	0.125	1.727	0.252
>180 minutes	17	1.916	0.704	5.214	0.203
Timing of obtaining blood cultures					

0-60 minutes	135	Ref.			0.939
61-120 minutes	14	1.328	0.441	3.995	0.614
121-180 minutes	10	0.885	0.239	3.281	0.855
>180 minutes	38	0.774	0.369	1.626	0.500
Timing of obtaining lactate measurement					
0-60 minutes	141	Ref.			0.763
61-120 minutes	10	1.012	0.273	3.748	0.986
121-180 minutes	6	0.304	0.035	2.668	0.282
>180 minutes	41	0.971	0.476	1.981	0.936
Completion of the sepsis bundle within 1 hour	87	0.978	0.571	1.675	0.936
Completion of the administration of antibiotics within 1 hour	173	0.701	0.397	1.237	0.220
Permutations of the completed elements within 1 hour					
No elements completed	20	Ref.			0.228
Antibiotics only	44	0.700	0.234	2.096	0.524
Blood cultures only	13	0.667	0.152	2.926	0.591
Lactate only	23	1.636	0.487	5.500	0.426
Antibiotics + Lactate	17	0.321	0.069	1.491	0.147
Antibiotics + Blood cultures	25	1.625	0.491	5.341	0.424
Blood cultures + Lactate	12	2.100	0.490	8.998	0.318
Antibiotics + Blood cultures + Lactate	87	0.962	0.357	2.597	0.939
Completion of the sepsis bundle within 3 hours	108	0.961	0.571	1.615	0.879
Completion of the administration of antibiotics within 3 hours	205	0.403	0.196	0.830	0.014
Permutation of the completed elements of 3-hour sepsis bundle					
No elements completed	8	Ref.			0.049
Antibiotics only	37	0.193	0.038	0.971	0.046
Blood cultures only	5	0.900	0.091	8.899	0.928
Lactate only	16	0.600	0.106	3.400	0.564
Antibiotics + Lactate	24	0.158	0.028	0.897	0.037
Antibiotics + Blood cultures	36	0.600	0.124	2.894	0.525
Blood cultures + Lactate	7	0.500	0.170	13.225	0.715
Antibiotics + Blood cultures + Lactate	108	0.382	0.087	1.682	0.203
Life-sustaining treatments during ICU stay					

Respiratory support					
Mechanical ventilation	173	7.546	3.645	15.625	<0.001
Duration of mechanical ventilation	167	0.998	0.969	1.028	0.909
Non-invasive ventilation	20	0.785	0.302	2.041	0.619
Duration of non-invasive ventilation	20	4.738	1.076	20.863	0.040
High-flow nasal oxygen	38	0.408	0.184	0.904	0.027
Duration of high-flow nasal oxygen	33	1.154	0.862	1.546	0.336
Additional ICU support					
Vasopressors/inotropes	163	3.408	1.899	6.116	<0.001
Renal replacement therapy	101	3.356	1.976	5.702	<0.001
Red blood cell transfusion	93	1.708	1.014	2.876	0.044
Platelet transfusion	50	2.746	1.455	5.185	0.002
Fresh frozen plasma transfusion	58	1.841	1.018	3.329	0.043
Surgical source control	25	0.435	0.168	1.132	0.088
Non-surgical source control	78	0.554	0.314	0.977	0.041

Abbreviations: **APACHE II**, Acute Physiology and Chronic Health Examination II; **CI**, confidence interval; **ICU**, intensive care unit; **NA**: not available; **OR**: odds ratio; **qSOFA**, quick Sequential (Sepsis-Related) Organ Failure Assessment; **Ref.**, reference; **SIRS**, systemic inflammatory response syndrome; **SOFA**, Sequential (Sepsis-Related) Organ Failure Assessment.

Table S16. Factors associated with hospital mortality in patients with sepsis: multivariable logistic regression analyses (backward elimination)

Step	Factors	Number of patients	Adjusted OR	95.0% CI for adjusted OR		P
				Lower	Upper	
1	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.062	0.922	4.612	0.078
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.308	0.103	0.923	0.035
	Cardiovascular disease	78	2.307	1.005	5.295	0.049
	Chronic neurological disease	36	0.239	0.070	0.821	0.023
	SOFA					
	< 8	140	Ref.			NA
	≥ 8	110	2.042	0.888	4.695	0.093
	APACHE II					
	< 21	148	Ref.			NA

	≥ 21	104	2.463	1.134	5.348	0.023
	Urinary Tract	37	0.231	0.065	0.821	0.024
	Abdominal	61	0.968	0.382	2.452	0.945
	Skin or Cutaneous Sites	19	2.817	0.810	9.792	0.103
	Pathogens detection					
	No pathogens detected	67	1.248	0.340	4.584	0.738
	Gram-negative bacteria	156	1.980	0.611	6.414	0.254
	Completion of the sepsis bundle within 1 hour	87	1.533	0.411	5.724	0.525
	Completion of the administration of antibiotics within 1 hour	173	2.106	0.409	10.828	0.373
	Completion of the sepsis bundle within 3 hours	108	0.808	0.214	3.053	0.754
	Completion of the administration of antibiotics within 3 hours	205	0.212	0.038	1.179	0.076
	Respiratory support					
	Mechanical ventilation	173	3.789	1.408	10.196	0.008
	High-flow nasal oxygen	38	0.931	0.305	2.837	0.899
	Additional ICU support					
	Vasopressors/inotropes	163	0.987	0.387	2.516	0.979
	Renal replacement therapy	101	1.513	0.665	3.442	0.323
	Red blood cell transfusion	93	1.022	0.456	2.291	0.959
	Platelet transfusion	50	0.905	0.358	2.289	0.834
	Fresh frozen plasma transfusion	58	1.625	0.668	3.952	0.285
	Surgical source control	25	0.369	0.108	1.260	0.112
	Non-surgical source control	78	0.454	0.206	0.998	0.049
	Constant		0.147			0.018
2	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.064	0.924	4.607	0.077
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.307	0.104	0.905	0.032
	Cardiovascular disease	78	2.308	1.007	5.292	0.048
	Chronic neurological disease	36	0.24	0.071	0.813	0.022
	SOFA					

	< 8	140	Ref.			NA
	≥ 8	110	2.035	0.916	4.521	0.081
	APACHE II					
	< 21	148	Ref.			NA
	≥ 21	104	2.459	1.142	5.295	0.022
	Urinary Tract	37	0.231	0.065	0.820	0.023
	Abdominal	61	0.968	0.382	2.452	0.946
	Skin or Cutaneous Sites	19	2.816	0.810	9.787	0.103
	Pathogens detection					
	No pathogens detected	67	1.246	0.342	4.538	0.739
	Gram-negative bacteria	156	1.977	0.615	6.352	0.253
	Completion of the sepsis bundle within 1 hour	87	1.533	0.411	5.723	0.525
	Completion of the administration of antibiotics within 1 hour	173	2.107	0.410	10.831	0.372
	Completion of the sepsis bundle within 3 hours	108	0.808	0.214	3.049	0.753
	Completion of the administration of antibiotics within 3 hours	205	0.212	0.038	1.178	0.076
	Respiratory support					
	Mechanical ventilation	173	3.775	1.461	9.753	0.006
	High-flow nasal oxygen	38	0.930	0.305	2.832	0.898
	Additional ICU support					
	Renal replacement therapy	101	1.511	0.670	3.406	0.320
	Red blood cell transfusion	93	1.020	0.459	2.269	0.961
	Platelet transfusion	50	0.906	0.359	2.286	0.835
	Fresh frozen plasma transfusion	58	1.626	0.669	3.952	0.284
	Surgical source control	25	0.369	0.108	1.257	0.111
	Non-surgical source control	78	0.454	0.206	0.998	0.049
	Constant		0.147			0.018
3	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.062	0.924	4.602	0.077
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.308	0.105	0.904	0.032

	Cardiovascular disease	78	2.306	1.007	5.282	0.048
	Chronic neurological disease	36	0.241	0.071	0.812	0.022
	SOFA					
	< 8	140	Ref.			NA
	≥ 8	110	2.033	0.916	4.514	0.081
	APACHE II					
	< 21	148	Ref.			NA
	≥ 21	104	2.457	1.142	5.283	0.022
	Urinary Tract	37	0.230	0.065	0.819	0.023
	Abdominal	61	0.969	0.383	2.453	0.947
	Skin or Cutaneous Sites	19	2.814	0.810	9.776	0.104
	Pathogens detection					
	No pathogens detected	67	1.240	0.345	4.461	0.742
	Gram-negative bacteria	156	1.975	0.615	6.346	0.253
	Completion of the sepsis bundle within 1 hour	87	1.534	0.411	5.727	0.524
	Completion of the administration of antibiotics within 1 hour	173	2.106	0.410	10.830	0.373
	Completion of the sepsis bundle within 3 hours	108	0.807	0.214	3.042	0.751
	Completion of the administration of antibiotics within 3 hours	205	0.212	0.038	1.179	0.076
	Respiratory support					
	Mechanical ventilation	173	3.782	1.469	9.739	0.006
	High-flow nasal oxygen	38	0.929	0.305	2.822	0.896
	Additional ICU support					
	Renal replacement therapy	101	1.518	0.688	3.349	0.301
	Platelet transfusion	50	0.911	0.372	2.233	0.839
	Fresh frozen plasma transfusion	58	1.631	0.677	3.927	0.275
	Surgical source control	25	0.370	0.109	1.254	0.110
	Non-surgical source control	78	4.454	0.207	0.998	0.049
	Constant		0.147			0.017
4	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.056	0.926	4.564	0.077
	Training program in ICU					
	No	50	Ref.			NA

	Yes	202	0.307	0.105	0.900	0.031
	Cardiovascular disease	78	2.316	1.021	5.254	0.045
	Chronic neurological disease	36	0.241	0.071	0.813	0.022
	SOFA					
	< 8	140	Ref.			NA
	≥ 8	110	2.026	0.920	4.461	0.080
	APACHE II					
	< 21	148	Ref.			NA
	≥ 21	104	2.459	1.143	5.290	0.021
	Urinary Tract	37	0.233	0.068	0.794	0.020
	Skin or Cutaneous Sites	19	2.831	0.826	9.710	0.098
	Pathogens detection					
	No pathogens detected	67	1.232	0.348	4.361	0.747
	Gram-negative bacteria	156	1.976	0.615	6.343	0.253
	Completion of the sepsis bundle within 1 hour	87	1.540	0.414	5.727	0.519
	Completion of the administration of antibiotics within 1 hour	173	2.097	0.410	10.738	0.374
	Completion of the sepsis bundle within 3 hours	108	0.802	0.215	2.989	0.742
	Completion of the administration of antibiotics within 3 hours	205	0.213	0.038	1.181	0.077
	Respiratory support					
	Mechanical ventilation	173	3.785	1.471	9.741	0.006
	High-flow nasal oxygen	38	0.930	0.306	2.824	0.899
	Additional ICU support					
	Renal replacement therapy	101	1.509	0.697	3.268	0.297
	Platelet transfusion	50	0.915	0.376	2.227	0.844
	Fresh frozen plasma transfusion	58	1.626	0.678	3.897	0.276
	Surgical source control	25	0.366	0.113	1.180	0.092
	Non-surgical source control	78	0.454	0.207	0.998	0.050
	Constant		0.147			0.017
5	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.062	0.930	4.572	0.075
	Training program in ICU					
	No	50	Ref.			NA

	Yes	202	0.302	0.106	0.858	0.025
	Cardiovascular disease	78	2.311	1.019	5.240	0.045
	Chronic neurological disease	36	0.242	0.072	0.814	0.022
	SOFA					
	< 8	140	Ref.			NA
	≥ 8	110	2.016	0.919	4.425	0.080
	APACHE II					
	< 21	148	Ref.			NA
	≥ 21	104	2.465	1.147	5.297	0.021
	Urinary Tract	37	0.233	0.068	0.794	0.020
	Skin or Cutaneous Sites	19	2.839	0.829	9.727	0.097
	Pathogens detection					
	No pathogens detected	67	1.225	0.347	4.325	0.753
	Gram-negative bacteria	156	1.962	0.614	6.268	0.255
	Completion of the sepsis bundle within 1 hour	87	1.525	0.414	5.622	0.526
	Completion of the administration of antibiotics within 1 hour	173	2.123	0.418	10.771	0.364
	Completion of the sepsis bundle within 3 hours	108	0.811	0.220	2.992	0.783
	Completion of the administration of antibiotics within 3 hours	205	0.212	0.038	1.178	0.076
	Respiratory support					
	Mechanical ventilation	173	3.838	1.525	9.658	0.004
	Additional ICU support					
	Renal replacement therapy	101	1.519	0.705	3.269	0.286
	Platelet transfusion	50	0.914	0.376	2.226	0.844
	Fresh frozen plasma transfusion	58	1.638	0.689	3.897	0.264
	Surgical source control	25	0.369	0.116	1.180	0.093
	Non-surgical source control	78	0.456	0.208	1.000	0.050
	Constant		0.146			0.016
6	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.036	0.927	4.473	0.077
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.305	0.108	0.862	0.025

	Cardiovascular disease	78	2.311	1.020	5.232	0.045
	Chronic neurological disease	36	0.244	0.073	0.818	0.022
	SOFA					
	< 8	140	Ref.			NA
	≥ 8	110	1.999	0.915	4.368	0.082
	APACHE II					
	< 21	148	Ref.			NA
	≥ 21	104	2.457	1.145	5.272	0.021
	Urinary Tract	37	2.457	1.145	5.272	0.021
	Skin or Cutaneous Sites	19	0.231	0.068	0.786	0.019
	Pathogens detection					
	No pathogens detected	67	1.236	0.351	4.357	0.741
	Gram-negative bacteria	156	1.966	0.615	6.283	0.254
	Completion of the sepsis bundle within 1 hour	87	1.523	0.413	5.613	0.527
	Completion of the administration of antibiotics within 1 hour	173	2.107	0.416	10.676	0.368
	Completion of the sepsis bundle within 3 hours	108	0.810	0.220	2.987	0.752
	Completion of the administration of antibiotics within 3 hours	205	0.215	0.039	1.187	0.078
	Respiratory support					
	Mechanical ventilation	173	3.822	1.520	9.610	0.004
	Additional ICU support					
	Renal replacement therapy	101	1.507	0.702	3.235	0.293
	Fresh frozen plasma transfusion	58	1.596	0.698	3.649	0.268
	Surgical source control	25	0.367	0.115	1.171	0.090
	Non-surgical source control	78	0.460	0.211	1.003	0.051
	Constant		0.145			0.016
7	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.024	0.923	4.435	0.078
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.302	0.107	0.853	0.024
	Cardiovascular disease	78	2.310	1.020	5.230	0.045
	Chronic neurological disease	36	0.246	0.074	0.826	0.023

	SOFA					
	< 8	140	Ref.			NA
	≥ 8	110	1.952	0.907	4.201	0.087
	APACHE II					
	< 21	148	Ref.			NA
	≥ 21	104	2.504	1.176	5.329	0.017
	Urinary Tract	37	0.233	0.069	0.789	0.019
	Skin or Cutaneous Sites	19	2.892	0.845	9.897	0.091
	Pathogens detection					
	No pathogens detected	67	1.249	0.355	4.398	0.729
	Gram-negative bacteria	156	1.967	0.614	6.299	0.255
	Completion of the sepsis bundle within 1 hour	87	1.284	0.600	2.751	0.520
	Completion of the administration of antibiotics within 1 hour	173	2.172	0.433	10.903	0.346
	Completion of the administration of antibiotics within 3 hours	205	0.215	0.039	1.195	0.079
	Respiratory support					
	Mechanical ventilation	173	3.840	1.528	9.649	0.004
	Additional ICU support					
	Renal replacement therapy	101	1.513	0.705	3.248	0.288
	Fresh frozen plasma transfusion	58	1.614	0.710	3.671	0.253
	Surgical source control	25	0.375	0.119	1.186	0.095
	Non-surgical source control	78	0.461	0.211	1.005	0.052
	Constant		0.139			0.013
8	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.038	0.931	4.460	0.075
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.306	0.109	0.862	0.025
	Cardiovascular disease	78	2.249	1.010	5.010	0.047
	Chronic neurological disease	36	0.250	0.075	0.836	0.024
	SOFA					
	< 8	140	Ref.			NA
	≥ 8	110	1.945	0.905	4.178	0.088
	APACHE II					

	< 21	148	Ref.			NA
	≥ 21	104	2.504	1.177	5.329	0.017
	Urinary Tract	37	0.237	0.071	0.798	0.020
	Skin or Cutaneous Sites	19	2.731	0.833	8.952	0.097
	Pathogens detection					
	Gram-negative bacteria	156	1.684	0.789	3.593	0.178
	Completion of the sepsis bundle within 1 hour	87	1.267	0.594	2.704	0.540
	Completion of the administration of antibiotics within 1 hour	173	2.200	0.436	11.099	0.340
	Completion of the administration of antibiotics within 3 hours	205	0.213	0.038	1.188	0.078
	Respiratory support					
	Mechanical ventilation	173	3.815	1.519	9.584	0.004
	Additional ICU support					
	Renal replacement therapy	101	1.511	0.704	3.241	0.290
	Fresh frozen plasma transfusion	58	1.604	0.706	3.644	0.259
	Surgical source control	25	0.380	0.121	1.196	0.098
	Non-surgical source control	78	0.461	0.212	1.006	0.052
	Constant		0.163			0.005
9	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.074	0.949	4.532	0.067
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.309	0.110	0.870	0.026
	Cardiovascular disease	78	2.215	0.997	4.920	0.051
	Chronic neurological disease	36	0.252	0.076	0.842	0.025
	SOFA					
	< 8	140	Ref.			NA
	≥ 8	110	1.968	0.916	4.228	0.083
	APACHE II					
	< 21	148	Ref.			NA
	≥ 21	104	2.487	1.170	5.283	0.018
	Urinary Tract	37	0.248	0.074	0.830	0.024
	Skin or Cutaneous Sites	19	2.715	0.831	8.875	0.098
	Pathogens detection					

	Gram-negative bacteria	156	1.669	0.782	3.561	0.186
	Completion of the administration of antibiotics within 1 hour	173	1.988	0.411	9.618	0.393
	Completion of the administration of antibiotics within 3 hours	205	0.214	0.039	1.180	0.077
	Respiratory support					
	Mechanical ventilation	173	3.742	1.496	9.363	0.005
	Additional ICU support					
	Renal replacement therapy	101	1.486	0.695	3.174	0.307
	Fresh frozen plasma transfusion	58	1.558	0.691	3.513	0.285
	Surgical source control	25	0.374	0.119	1.176	0.092
	Non-surgical source control	78	0.466	0.214	1.013	0.054
	Constant		0.182			0.005
10	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.024	.931	4.396	0.075
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.324	0.116	0.903	0.031
	Cardiovascular disease	78	2.168	0.980	4.793	0.056
	Chronic neurological disease	36	0.249	0.075	0.829	0.023
	SOFA					
	< 8	140	Ref.			NA
	≥ 8	110	2.023	0.946	4.326	0.069
	APACHE II					
	< 21	148	Ref.			NA
	≥ 21	104	2.529	1.194	5.355	0.015
	Urinary Tract	37	0.264	0.080	0.871	0.029
	Skin or Cutaneous Sites	19	2.731	0.841	8.868	0.095
	Pathogens detection					
	Gram-negative bacteria	156	1.589	0.752	3.360	0.225
	Completion of the administration of antibiotics within 3 hours	205	0.387	0.143	1.050	0.062
	Respiratory support					
	Mechanical ventilation	173	3.878	1.558	9.657	0.004
	Additional ICU support					

	Renal replacement therapy	101	1.434	0.676	3.041	0.348
	Fresh frozen plasma transfusion	58	1.534	0.682	3.451	0.301
	Surgical source control	25	0.392	0.126	1.220	0.106
	Non-surgical source control	78	0.462	0.212	1.006	0.052
	Constant		0.184			0.006
11	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.059	0.949	4.464	0.067
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.320	0.115	0.887	0.028
	Cardiovascular disease	78	2.212	1.002	4.881	0.049
	Chronic neurological disease	36	0.234	0.070	0.779	0.018
	SOFA					
	< 8	140	Ref.			NA
	≥ 8	110	2.239	1.080	4.641	0.030
	APACHE II					
	< 21	148	Ref.			NA
	≥ 21	104	2.608	1.234	5.510	0.012
	Urinary Tract	37	0.275	0.084	0.900	0.033
	Skin or Cutaneous Sites	19	2.766	0.865	8.848	0.086
	Pathogens detection					
	Gram-negative bacteria	156	1.646	0.783	3.461	0.188
	Completion of the administration of antibiotics within 3 hours	205	0.401	0.149	1.077	0.070
	Respiratory support					
	Mechanical ventilation	173	4.050	1.637	10.023	0.002
	Additional ICU support					
	Fresh frozen plasma transfusion	58	1.666	0.758	3.659	0.204
	Surgical source control	25	0.370	0.120	1.142	0.084
	Non-surgical source control	78	0.480	0.223	1.033	0.060
	Constant		0.184			0.006
12	University affiliation					
	No	153	Ref.			NA
	Yes	99	1.963	0.913	4.223	0.084
	Training program in ICU					

	No	50	Ref.			NA
	Yes	202	0.357	0.133	0.961	0.042
	Cardiovascular disease	78	2.208	1.005	4.852	0.049
	Chronic neurological disease	36	0.224	0.068	0.737	0.014
	SOFA					
	< 8	140	Ref.			NA
	≥ 8	110	2.430	1.184	4.989	0.016
	APACHE II					
	< 21	148	Ref.			NA
	≥ 21	104	2.584	1.224	5.452	0.013
	Urinary Tract	37	0.307	0.097	0.967	0.044
	Skin or Cutaneous Sites	19	2.803	0.878	8.950	0.082
	Pathogens detection					
	Gram-negative bacteria	156	1.728	0.828	3.606	0.145
	Completion of the administration of antibiotics within 3 hours	205	0.393	0.147	1.050	0.063
	Respiratory support					
	Mechanical ventilation	173	4.138	1.678	10.200	0.002
	Additional ICU support					
	Surgical source control	25	0.371	0.118	1.167	0.090
	Non-surgical source control	78	0.507	0.236	1.086	0.080
	Constant		0.177			0.004
13	University affiliation					
	No	153	Ref.			NA
	Yes	99	1.966	0.917	4.213	0.082
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.379	0.143	1.009	0.052
	Cardiovascular disease	78	2.308	1.060	5.027	0.035
	Chronic neurological disease	36	0.226	0.070	.731	0.013
	SOFA					
	< 8	140	Ref.			NA
	≥ 8	110	2.403	1.176	4.908	0.016
	APACHE II					
	< 21	148	Ref.			NA
	≥ 21	104	2.341	1.129	4.856	0.022
	Urinary Tract	37	0.315	0.101	.986	0.047
	Skin or Cutaneous Sites	19	2.465	0.787	7.716	0.121
	Completion of the administration of antibiotics	205	0.359	0.135	0.957	0.041

	within 3 hours					
	Respiratory support					
	Mechanical ventilation	173	4.556	1.860	11.160	0.001
	Additional ICU support					
	Surgical source control	25	0.382	0.122	1.194	0.098
	Non-surgical source control	78	0.564	0.267	1.191	0.133
	Constant		0.226			0.010
14	University affiliation					
	No	153	Ref.			NA
	Yes	99	1.967	0.921	4.200	0.080
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.338	0.131	0.870	0.025
	Cardiovascular disease	78	2.177	1.005	4.719	0.049
	Chronic neurological disease	36	0.206	0.066	0.645	0.007
	SOFA					
	< 8	140	Ref.			NA
	≥ 8	110	2.359	1.160	4.797	0.018
	APACHE II					
	< 21	148	Ref.			NA
	≥ 21	104	2.631	1.295	5.345	0.007
	Urinary Tract	37	0.282	0.092	0.865	0.027
	Skin or Cutaneous Sites	19	2.195	0.707	6.809	0.174
	Completion of the administration of antibiotics within 3 hours	205	0.395	0.152	1.029	0.057
	Respiratory support					
	Mechanical ventilation	173	4.070	1.696	9.770	0.002
	Additional ICU support					
	Surgical source control	25	0.384	0.124	1.192	0.098
	Constant		0.224			0.008
15	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.024	0.953	4.299	0.066
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.308	0.121	0.788	0.014
	Cardiovascular disease	78	2.218	1.026	4.795	0.043
	Chronic neurological disease	36	0.196	0.063	0.609	0.005
	SOFA					
	< 8	140	Ref.			NA

	≥ 8	110	2.358	1.161	4.789	0.018
	APACHE II					
	< 21	148	Ref.			NA
	≥ 21	104	2.625	1.296	5.316	0.007
	Urinary Tract	37	0.280	0.091	0.863	0.027
	Completion of the administration of antibiotics within 3 hours	205	0.400	0.155	1.032	0.058
	Respiratory support					
	Mechanical ventilation	173	3.893	1.644	9.220	0.002
	Additional ICU support					
	Surgical source control	25	0.406	0.131	1.264	0.120
	Constant		0.264			0.015
16	University affiliation					
	No	153	Ref.			NA
	Yes	99	1.852	0.884	3.879	0.103
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.312	0.123	0.787	0.014
	Cardiovascular disease	78	2.286	1.065	4.909	0.034
	Chronic neurological disease	36	0.206	0.067	0.637	0.006
	SOFA					
	< 8	140	Ref.			NA
	≥ 8	110	2.450	1.217	4.929	0.012
	APACHE II					
	< 21	148	Ref.			NA
	≥ 21	104	2.665	1.327	5.352	0.006
	Urinary Tract	37	0.283	0.094	0.852	0.025
	Completion of the administration of antibiotics within 3 hours	205	0.377	0.147	0.969	0.043
	Respiratory support					
	Mechanical ventilation	173	3.754	1.592	8.856	0.003
	Constant		0.248			0.010
17	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.392	0.162	0.949	0.038
	Cardiovascular disease	78	2.181	1.019	4.664	0.044
	Chronic neurological disease	36	0.179	0.058	0.546	0.003
	SOFA					
	< 8	140	Ref.			NA
	≥ 8	110	2.717	1.371	5.382	0.004

	APACHE II					
	< 21	148	Ref.			NA
	≥ 21	104	2.668	1.338	5.321	0.005
	Urinary Tract	37	0.312	0.105	0.932	0.037
	Completion of the administration of antibiotics within 3 hours	205	0.381	0.151	0.965	0.042
	Respiratory support					
	Mechanical ventilation	173	4.391	1.912	10.085	<0.001
	Constant		0.230			0.007

Abbreviations: **AOR**: adjusted odds ratio; **APACHE II**, Acute Physiology and Chronic Health Examination II; **CI**: confidence interval; **ICU**, intensive care unit; **NA**: not available; **Ref.**, reference; **SOFA**, Sequential (Sepsis-Related) Organ Failure Assessment.

Table S17. Factors associated with intensive care unit mortality in patients with sepsis: univariable regression analyses

Factors	Number of patients	OR	95.0% CI for OR		P
			Lower	Upper	
Participating hospital					
115 People's	25	Ref.			0.005
Bach Mai	26	0.243	0.075	0.789	0.019
Bai Chay	14	0.156	0.036	0.664	0.012
Can Tho	7	0.292	0.052	1.650	0.163
Cho Ray	41	0.336	0.116	0.976	0.045
Da Nang	12	0.389	0.093	1.624	0.195
Dong Da	9	0.194	0.038	1.000	0.050
Hanoi Medical University	12	0.389	0.093	1.624	0.195
Hue	39	0.100	0.031	0.323	<0.001
Saint Paul	9	0.000	0.000	NA	0.999
Thai Nguyen	2	0.389	0.021	7.111	0.524
Thanh Nhan	1	0.000	0.000	NA	>0.999
Vietnam–Czechoslovakia Friendship	48	0.056	0.016	0.189	<0.001
Vinmec Times City International	7	0.000	0.000	NA	0.999
Hospital characteristics					
University affiliation					
No	153	Ref.			NA
Yes	99	2.260	1.322	3.862	0.003
ICU characteristics					
Type of ICU					
Medical	110	Ref.			NA

Mixed	142	1.050	0.619	1.781	0.857
Nurse to patient ratio					
1 nurse : 4 or more patients	58	Ref.			0.660
1 or more nurses : 1 patient	7	0.000	0.000	NA	0.999
1 nurse : 2 patients	187	1.347	0.710	2.553	0.362
Intensivist to patient ratio					
1 intensivist : 5 or fewer patients	165	Ref.			0.082
1 intensivist : 6 to 8 patients	75	0.553	0.298	1.025	0.060
1 intensivist : 12 or more patients	12	1.750	0.540	5.668	0.351
Training programme in ICU					
No	50	Ref.			NA
Yes	202	0.458	0.243	0.861	0.015
Baseline characteristics					
Age (year)	252	0.998	0.983	1.014	0.802
Age (year) group					
< 20	3	Ref.			
20 - 39	19	1.455	0.112	18.956	0.775
40 - 59	74	1.020	0.088	11.805	0.987
≥ 60	156	0.943	0.084	10.651	0.962
Sex (male)	162	0.728	0.417	1.272	0.265
Collection batch					
Collection 1 (Jan)	80	Ref.			0.038
Collection 2 (April)	62	2.821	1.377	5.779	0.005
Collection 3 (July)	54	1.743	0.815	3.725	0.152
Collection 4 (Oct)	56	1.399	0.649	3.016	0.391
Admission type					
Medical	236	Ref.			0.620
Elective surgical	2	0.000	0.000	NA	0.999
Unscheduled surgical	14	0.522	0.142	1.924	0.329
Admission source					
Emergency department	138	Ref.			0.615
Operating room	4	0.712	0.072	7.041	0.772
General wards	56	0.931	0.475	1.825	0.836
Other ICUs or HDU	16	0.712	0.217	2.333	0.575
Inter-hospital transfer	37	1.816	0.867	3.802	0.114
Others	1	34512417 56	0.000	NA	>0.999
Comorbidities					
Cardiovascular disease	78	1.506	0.863	2.627	0.150
Chronic lung disease	30	0.840	0.367	1.924	0.680

Chronic neurological disease	36	0.526	0.229	1.212	0.131
Chronic kidney disease	23	0.864	0.341	2.188	0.757
Peptic ulcer disease	9	1.000	0.244	4.101	>0.999
Chronic liver disease	27	1.200	0.524	2.750	0.666
Diabetes mellitus	67	1.063	0.589	1.917	0.840
Connective tissue disease	3	1.000	0.089	11.188	>0.999
Immunosuppression	10	0.852	0.215	3.381	0.820
Haematological malignancies	5	1.341	0.220	8.186	0.750
Solid malignant tumours	12	2.077	0.649	6.648	0.218
Vital signs					
GCS	251	0.589	0.794	0.930	<0.001
HR (beats per min)	252	1.017	1.003	1.030	0.014
Temperature (°C)	252	0.910	0.700	1.184	0.484
MBP (mmHg)	252	0.978	0.965	0.992	0.002
SBP (mmHg)	252	0.985	0.976	0.995	0.002
RR (breaths per min)	252	0.993	0.949	1.040	0.774
Blood investigations					
Total WBC (x10 ⁹ /L)	252	1.001	0.973	1.030	0.941
PLT (x10 ⁹ /L)	252	0.997	0.994	0.999	0.005
Hb (g/dL)	251	0.918	0.828	1.018	0.105
Hct (%)	252	0.973	0.940	1.007	0.123
K ⁺ (mmol/L)	252	0.966	0.692	1.348	0.837
Na ⁺ (mmol/L)	252	1.038	1.005	1.073	0.025
Creatinine (μmol/L)	252	1.000	0.998	1.002	0.926
Bilirubin (μmol/l)	232	1.001	0.997	1.005	0.631
pH	248	0.131	0.016	1.108	0.062
PaO ₂ (mmHg)	244	1.002	0.999	1.006	0.212
FiO ₂	245	11.704	3.405	40.224	<0.001
PaO ₂ /FiO ₂ ratio	243	0.998	0.997	1.000	0.119
Severity of illness scores					
qSOFA	252	1.768	1.231	2.540	0.002
qSOFA					
0 - 1	69	Ref.			NA
2 - 3	183	1.959	1.039	3.694	0.038
SIRS	252	1.045	0.798	1.368	0.750
SOFA	250	1.244	1.149	1.346	<0.001
SOFA					
2 - 3	46	Ref.			<0.001
4 - 5	36	1.147	0.373	3.527	0.811
6 - 7	58	1.239	0.459	3.343	0.672
8 - 9	32	2.850	1.002	8.109	0.050
10 - 11	38	3.845	1.422	10.401	0.008

12 - 14	29	10.556	3.529	31.569	<0.001
> 14	11	12.667	2.742	58.517	0.001
SOFA					
< 10	172	Ref.			NA
≥ 10	78	4.650	2.620	8.254	<0.001
APACHE II	252	1.076	1.039	1.114	<0.001
APACHE II					
0 - 4	3	Ref.			0.002
5 - 9	22	47512569 8.2	0.000	NA	0.999
10 - 14	61	27959319 9.3	0.000	NA	0.999
15 - 19	52	71796772 1.6	0.000	NA	0.999
20 - 24	58	13125347 41	0.000	-NA	0.999
25 - 29	28	24965695 78	0.000	NA	0.999
30 - 34	19	74558186 4.8	0.000	NA	0.999
> 34	9	20192842 17	0.000	NA	0.999
APACHE II					
< 19	129	Ref.			NA
≥ 19	123	3.535	1.025	6.171	<0.001
Site of Infection					
Respiratory	143	1.186	0.697	2.018	0.529
Urinary tract	37	0.340	0.136	0.851	0.021
Abdominal	61	1.416	0.779	2.575	0.254
Neurological	12	0.654	0.172	2.483	0.533
Bones or joints	2	0.000	0.000	NA	0.999
Skin or cutaneous sites	19	2.387	0.931	6.123	0.070
Intravascular catheter	1	0.000	0.000	NA	>0.999
Infective endocarditis	1	32698768 34	0.000	NA	>0.999
Primary bacteraemia	7	0.325	0.039	2.747	0.302
Systemic	6	1.000	0.179	5.573	>0.999
Microbiology					
Pathogens detection					
No pathogens detected	67	0.599	0.320	1.121	0.109
Gram negative bacteria	156	1.258	0.729	2.171	0.409
Gram positive bacteria	34	0.950	0.439	2.055	0.896

Fungi	7	1.519	0.332	6.946	0.590
Viruses	2	33097533 84	0.000	NA	0.999
Other pathogens	4	0.663	0.068	6.469	0.723
Completion of sepsis bundle elements					
Timing of antibiotics administration					
0-60 minutes	173	Ref.			0.693
61-120 minutes	21	1.132	0.432	2.966	0.801
121-180 minutes	14	0.617	0.165	2.304	0.473
>180 minutes	17	1.585	0.572	4.389	0.376
Timing of obtaining blood cultures					
0-60 minutes	135	Ref.			0.557
61-120 minutes	14	1.812	0.600	5.474	0.292
121-180 minutes	10	0.777	0.192	3.143	0.723
>180 minutes	38	0.738	0.337	1.618	0.449
Timing of obtaining lactate measurement					
0-60 minutes	141	Ref.			0.785
61-120 minutes	10	1.377	0.370	5.119	0.633
121-180 minutes	6	0.413	0.047	3.638	0.426
>180 minutes	41	0.855	0.400	1.826	0.685
Completion of the sepsis bundle within 1 hour	87	0.931	0.532	1.630	0.802
Completion of the initial administration of antibiotics within 1 hour	173	0.671	0.374	1.202	0.180
Permutations of the completed elements within 1 hour					
No elements completed	20	Ref.			0.368
Antibiotics only	44	0.696	0.224	2.163	0.532
Blood cultures only	13	0.825	0.185	3.676	0.801
Lactate only	23	1.702	0.497	5.826	0.397
Antibiotics + Lactate	17	0.248	0.044	1.408	0.115
Antibiotics + Blood cultures	25	1.459	0.434	4.901	0.541
Blood cultures + Lactate	12	1.327	0.305	5.770	0.706
Antibiotics + Blood cultures + Lactate	87	0.881	0.317	2.452	0.809
Completion of the sepsis bundle within 3 hours	108	0.938	0.546	1.609	0.815

Completion of the initial administration of antibiotics within 3 hours	205	0.434	0.211	0.889	0.023
Permutation of the completed elements of 3-hour sepsis bundle					
No elements completed	8	Ref.			0.141
Antibiotics only	37	0.276	0.056	1.355	0.113
Blood cultures only	5	1.500	0.156	14.420	0.725
Lactate only	16	0.778	0.142	4.265	0.772
Antibiotics + Lactate	24	0.200	0.035	1.154	0.072
Antibiotics + Blood cultures	36	0.714	0.154	3.319	0.668
Blood cultures + Lactate	7	1.333	0.173	10.254	0.782
Antibiotics + Blood cultures + Lactate	108	0.479	0.113	2.030	0.318
Life-sustaining treatments during ICU stay					
Respiratory support					
Mechanical ventilation	173	6.856	3.109	15.116	<0.001
Duration of mechanical ventilation	167	1.005	0.976	1.036	0.722
Non-invasive ventilation	20	0.841	0.311	2.273	0.732
Duration of non-invasive ventilation	20	7.408	1.097	50.015	0.040
High-flow nasal oxygen	38	0.257	0.096	0.685	0.007
Duration of high-flow nasal oxygen	33	1.369	0.953	1.967	0.089
Additional ICU support					
Vasopressors/inotropes	163	2.956	1.600	5.460	0.001
Renal replacement therapy	101	4.239	2.432	7.388	<0.001
Red blood cell transfusion	93	1.682	0.983	2.879	0.058
Platelet transfusion	50	2.966	1.571	5.597	0.001
Fresh frozen plasma transfusion	58	1.891	1.036	3.453	0.038
Surgical source control	25	0.599	0.230	1.562	0.295
Non-surgical source control	78	0.535	0.293	0.977	0.042

Abbreviations: **APACHE II**, Acute Physiology and Chronic Health Examination II; **CI**: confidence interval; **ICU**, intensive care unit; **NA**: not available; **OR**: odds ratio; **qSOFA**, quick Sequential (Sepsis-Related) Organ Failure Assessment; **Ref.**, reference; **SIRS**, systemic inflammatory response syndrome; **SOFA**, Sequential (Sepsis-Related) Organ Failure Assessment.

Table S18. Factors associated with intensive care unit mortality in patients with sepsis: multivariable logistic regression analyses (backward elimination)

Step	Factors	Number of patients	Adjusted OR	95.0% CI for adjusted OR		p
				Lower	Upper	
1	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.512	1.020	6.188	0.045
	Intensivist to patient ratio					
	1 intensivist : 5 or fewer patients	165	Ref.			0.111
	1 intensivist : 6 to 8 patients	75	3.315	1.069	10.286	0.038
	1 intensivist : 12 or more patients	12	1.278	0.244	6.712	0.772
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.277	0.095	0.807	0.019
	Cardiovascular disease	78	2.026	0.870	4.718	0.102
	Chronic neurological disease	36	0.815	0.240	2.773	0.744
	Solid malignant tumors	12	5.711	1.256	25.979	0.024
	SOFA					
	< 10	172	Ref.			NA
	≥ 10	78	3.022	1.267	7.208	0.013
	APACHE II					
	< 19	129	Ref.			NA
	≥ 19	123	1.623	0.676	3.900	0.279
	Urinary Tract	37	0.191	0.050	0.723	0.015
	Abdominal	61	0.852	0.314	2.308	0.752
	Skin or Cutaneous Sites	19	3.648	0.948	14.032	0.060
	Pathogens detection					
	No pathogens detected	67	1.298	0.336	5.018	0.706
	Gram-negative bacteria	156	1.413	0.432	4.628	0.568
	Completion of the sepsis bundle within 1 hour	87	0.946	0.228	3.937	0.940
	Completion of the administration of antibiotics within 1 hour	173	1.622	0.293	8.964	0.579
	Completion of the sepsis bundle within 3 hours	108	0.898	0.214	3.771	0.884
	Completion of the	205	0.239	0.037	1.545	0.133

	administration of antibiotics within 3 hours					
	Respiratory support					
	Mechanical ventilation	173	2.813	0.939	8.432	0.065
	High-flow nasal oxygen	38	0.181	0.035	0.925	0.040
	Additional ICU support					
	Vasopressors/inotropes	163	0.899	0.327	2.471	0.836
	Renal replacement therapy	101	3.551	1.471	8.569	0.005
	Red blood cell transfusion	93	0.612	0.258	1.451	0.264
	Platelet transfusion	50	1.384	0.536	3.569	0.502
	Fresh frozen plasma transfusion	58	1.427	0.573	3.553	0.445
	Surgical source control	25	0.662	0.182	2.404	0.531
	Non-surgical source control	78	0.322	0.132	0.783	0.012
	Constant		0.118			0.013
2	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.507	1.019	6.170	0.045
	Intensivist to patient ratio					
	1 intensivist : 5 or fewer patients	165	Ref.			0.108
	1 intensivist : 6 to 8 patients	75	3.295	1.074	10.110	0.037
	1 intensivist : 12 or more patients	12	1.288	0.249	6.675	0.763
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.278	0.096	0.807	0.019
	Cardiovascular disease	78	2.030	0.873	4.720	0.100
	Chronic neurological disease	36	0.813	0.239	2.758	0.739
	Solid malignant tumors	12	5.677	1.259	25.608	0.024
	SOFA					
	< 10	172	Ref.			NA
	≥ 10	78	3.031	1.275	7.208	0.012
	APACHE II					
	< 19	129	Ref.			NA
	≥ 19	123	1.617	0.677	3.860	0.279

	Urinary Tract	37	0.190	0.050	0.720	0.015
	Abdominal	61	0.855	0.317	2.304	0.757
	Skin or Cutaneous Sites	19	3.633	0.949	13.907	0.060
	Pathogens detection					
	No pathogens detected	67	1.297	0.335	5.012	0.707
	Gram-negative bacteria	156	1.418	0.434	4.629	0.563
	Completion of the administration of antibiotics within 1 hour	173	1.624	0.294	8.977	0.578
	Completion of the sepsis bundle within 3 hours	108	0.858	0.377	1.954	0.716
	Completion of the administration of antibiotics within 3 hours	205	0.239	0.037	1.544	0.133
	Respiratory support					
	Mechanical ventilation	173	2.813	0.938	8.432	0.065
	High-flow nasal oxygen	38	0.182	0.036	0.925	0.040
	Additional ICU support					
	Vasopressors/inotropes	163	0.898	0.327	2.469	0.835
	Renal replacement therapy	101	3.544	1.470	8.540	0.005
	Red blood cell transfusion	93	0.611	0.258	1.450	0.264
	Platelet transfusion	50	1.384	0.537	3.570	0.501
	Fresh frozen plasma transfusion	58	1.425	0.572	3.550	0.446
	Surgical source control	25	0.659	0.182	2.380	0.524
	Non-surgical source control	78	0.322	0.132	0.782	0.012
	Constant		0.118			0.013
3	University affiliation					
	No	153	Reference			NA
	Yes	99	2.509	1.019	6.180	0.045
	Intensivist to patient ratio					
	1 intensivist : 5 or fewer patients	165	Reference			0.108
	1 intensivist : 6 to 8 patients	75	3.300	1.076	10.120	0.037
	1 intensivist : 12 or more patients	12	1.311	0.256	6.722	0.746
	Training program in ICU					

No	50	Ref.			NA
Yes	202	0.272	0.095	0.778	0.015
Cardiovascular disease	78	2.043	0.881	4.741	0.096
Chronic neurological disease	36	0.821	.243	2.776	0.751
Solid malignant tumors	12	5.733	1.272	25.841	0.023
SOFA					
< 10	172	Ref.			NA
≥ 10	78	2.957	1.285	6.806	0.011
APACHE II					
< 19	129	Ref.			NA
≥ 19	123	1.604	0.674	3.817	0.285
Urinary Tract	37	0.190	0.050	0.719	0.015
Abdominal	61	0.856	0.318	2.307	0.759
Skin or Cutaneous Sites	19	3.605	0.945	13.751	0.060
Pathogens detection					
No pathogens detected	67	1.277	0.333	4.893	0.721
Gram-negative bacteria	156	1.405	0.432	4.570	0.572
Completion of the administration of antibiotics within 1 hour	173	1.624	0.293	9.016	0.579
Completion of the sepsis bundle within 3 hours	108	0.851	0.375	1.931	0.700
Completion of the administration of antibiotics within 3 hours	205	0.240	0.037	1.553	0.134
Respiratory support					
Mechanical ventilation	173	2.722	.951	7.789	0.062
High-flow nasal oxygen	38	0.181	.036	0.924	0.040
Additional ICU support		3.464	1.478	8.117	0.004
Renal replacement therapy	101	0.604	0.256	1.425	0.250
Red blood cell transfusion	93	1.393	0.541	3.586	0.492
Platelet transfusion	50	1.431	0.574	3.566	0.442
Fresh frozen plasma transfusion	58	0.656	0.182	2.368	0.520
Surgical source control	25	0.323	0.133	0.784	0.013
Non-surgical source control	78	0.118			0.013
Constant		0.118			0.013

4	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.478	1.010	6.083	0.048
	Intensivist to patient ratio					
	1 intensivist : 5 or fewer patients	165	Ref.			0.112
	1 intensivist : 6 to 8 patients	75	3.255	1.064	9.957	0.039
	1 intensivist : 12 or more patients	12	1.303	0.253	6.710	0.751
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.269	0.094	0.768	0.014
	Cardiovascular disease	78	2.084	0.905	4.797	0.084
	Chronic neurological disease	36	0.822	0.242	2.793	0.754
	Solid malignant tumors	12	5.847	1.309	26.112	0.021
	SOFA					
	< 10	172	Ref.			NA
	≥ 10	78	2.880	1.274	6.511	0.011
	APACHE II					
	< 19	129	Ref.			NA
	≥ 19	123	1.632	0.690	3.861	0.265
	Urinary Tract	37	0.201	0.056	0.720	0.014
	Skin or Cutaneous Sites	19	3.688	0.969	14.039	0.056
	Pathogens detection					
	No pathogens detected	67	1.227	0.329	4.575	0.761
	Gram-negative bacteria	156	1.400	0.432	4.540	0.575
	Completion of the administration of antibiotics within 1 hour	173	1.580	0.286	8.710	0.600
	Completion of the sepsis bundle within 3 hours	108	0.844	0.373	1.909	0.684
	Completion of the administration of antibiotics within 3 hours	205	0.246	0.038	1.582	0.140
	Respiratory support					
	Mechanical ventilation	173	2.714	0.949	7.757	0.062
	High-flow nasal oxygen	38	0.187	0.037	0.940	0.042
	Additional ICU support					
	Renal replacement	101	3.332	1.478	7.513	0.004

	therapy					
	Red blood cell transfusion	93	.604	0.256	1.427	0.251
	Platelet transfusion	50	1.425	0.558	3.634	0.459
	Fresh frozen plasma transfusion	58	1.405	0.567	3.481	0.463
	Surgical source control	25	0.624	0.180	2.158	0.456
	Non-surgical source control	78	0.328	0.136	0.792	0.013
	Constant		0.118			0.013
5	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.509	1.026	6.136	.044
	Intensivist to patient ratio					
	1 intensivist : 5 or fewer patients	165	Ref.			0.116
	1 intensivist : 6 to 8 patients	75	3.206	1.054	9.756	0.040
	1 intensivist : 12 or more patients	12	1.291	0.251	6.635	0.759
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.272	0.096	0.775	0.015
	Cardiovascular disease	78	2.036	0.898	4.615	0.089
	Chronic neurological disease	36	0.829	0.244	2.816	0.764
	Solid malignant tumors	12	5.850	1.314	26.056	0.020
	SOFA					
	< 10	172	Ref.			NA
	≥ 10	78	2.848	1.265	6.412	0.011
	APACHE II					
	< 19	129	Ref.			NA
	≥ 19	123	1.629	0.689	3.853	0.267
	Urinary Tract	37	0.205	0.058	0.725	0.014
	Skin or Cutaneous Sites	19	3.469	0.968	12.432	0.056
	Pathogens detection					
	Gram-negative bacteria	156	1.221	0.560	2.663	0.615
	Completion of the administration of antibiotics within 1 hour	173	1.592	0.289	8.754	0.593
	Completion of the sepsis bundle within 3 hours	108	0.836	0.370	1.885	0.665

	Completion of the administration of antibiotics within 3 hours	205	0.244	0.038	1.567	0.137
	Respiratory support					
	Mechanical ventilation	173	2.709	0.947	7.751	0.063
	High-flow nasal oxygen	38	0.191	0.038	0.950	0.043
	Additional ICU support					
	Renal replacement therapy	101	3.356	1.489	7.564	0.003
	Red blood cell transfusion	93	0.593	0.253	1.388	0.228
	Platelet transfusion	50	1.416	0.556	3.605	0.466
	Fresh frozen plasma transfusion	58	1.403	0.567	3.475	0.464
	Surgical source control	25	0.634	0.184	2.180	0.470
	Non-surgical source control	78	0.327	0.136	0.790	0.013
	Constant		0.137			0.004
6	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.571	1.065	6.206	0.036
	Intensivist to patient ratio					
	1 intensivist : 5 or fewer patients	165	Ref.			0.109
	1 intensivist : 6 to 8 patients	75	3.251	1.071	9.872	0.037
	1 intensivist : 12 or more patients	12	1.285	0.250	6.610	0.764
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.276	0.098	0.780	0.015
	Cardiovascular disease	78	1.990	0.891	4.444	0.093
	Solid malignant tumors	12	6.020	1.364	26.577	0.018
	SOFA					
	< 10	172	Ref.			NA
	≥ 10	78	2.887	1.288	6.473	0.010
	APACHE II					
	< 19	129	Ref.			NA
	≥ 19	123	1.596	0.681	3.740	0.282
	Urinary Tract	37	0.202	0.057	0.711	0.013
	Skin or Cutaneous Sites	19	3.549	0.993	12.684	0.051

	Pathogens detection					
	Gram-negative bacteria	156	1.223	0.560	2.670	0.613
	Completion of the administration of antibiotics within 1 hour	173	1.614	0.293	8.895	0.582
	Completion of the sepsis bundle within 3 hours	108	0.834	0.370	1.881	0.662
	Completion of the administration of antibiotics within 3 hours	205	0.236	0.037	1.506	0.127
	Respiratory support					
	Mechanical ventilation	173	2.690	0.942	7.683	0.065
	High-flow nasal oxygen	38	0.186	0.038	0.923	0.040
	Additional ICU support					
	Renal replacement therapy	101	3.418	1.530	7.635	0.003
	Red blood cell transfusion	93	0.584	0.250	1.360	0.212
	Platelet transfusion	50	1.425	0.559	3.629	0.458
	Fresh frozen plasma transfusion	58	1.413	0.572	3.490	0.454
	Surgical source control	25	0.637	0.185	2.194	0.475
	Non-surgical source control	78	0.320	0.134	0.764	0.010
	Constant		0.133			0.003
7	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.552	1.059	6.147	0.037
	Intensivist to patient ratio					
	1 intensivist : 5 or fewer patients	165	Ref.			0.119
	1 intensivist : 6 to 8 patients	75	3.055	1.044	8.936	0.041
	1 intensivist : 12 or more patients	12	1.177	0.241	5.750	0.840
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.273	0.096	0.771	0.014
	Cardiovascular disease	78	2.003	.897	4.474	0.090
	Solid malignant tumors	12	5.845	1.351	25.290	0.018
	SOFA					

	< 10	172	Ref.			NA
	≥ 10	78	2.858	1.279	6.385	0.010
	APACHE II					
	< 19	129	Ref.			NA
	≥ 19	123	1.598	0.682	3.742	0.280
	Urinary Tract	37	0.201	0.057	0.704	0.012
	Skin or Cutaneous Sites	19	3.628	1.018	12.937	0.047
	Pathogens detection					
	Gram-negative bacteria	156	1.229	0.563	2.679	0.605
	Completion of the administration of antibiotics within 1 hour	173	1.735	0.326	9.238	0.518
	Completion of the administration of antibiotics within 3 hours	205	.239	0.038	1.521	0.130
	Respiratory support					
	Mechanical ventilation	173	2.709	0.947	7.747	0.063
	High-flow nasal oxygen	38	0.198	0.041	0.951	0.043
	Additional ICU support					
	Renal replacement therapy	101	3.411	1.528	7.616	0.003
	Red blood cell transfusion	93	0.596	0.258	1.378	0.227
	Platelet transfusion	50	1.393	0.551	3.524	0.484
	Fresh frozen plasma transfusion	58	1.449	0.592	3.550	0.417
	Surgical source control	25	0.653	0.191	2.230	0.497
	Non-surgical source control	78	0.322	0.135	0.769	0.011
	Constant		0.123			0.002
8	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.564	1.064	6.175	0.036
	Intensivist to patient ratio					
	1 intensivist : 5 or fewer patients	165	Ref.			0.107
	1 intensivist : 6 to 8 patients	75	3.128	1.073	9.113	0.037
	1 intensivist : 12 or more patients	12	1.195	0.246	5.798	0.825
	Training program in ICU					

	No	50	Ref.			NA
	Yes	202	0.272	0.096	0.768	0.014
	Cardiovascular disease	78	2.040	0.916	4.543	0.081
	Solid malignant tumors	12	5.796	1.343	25.024	0.019
	SOFA					
	< 10	172	Ref.			NA
	≥ 10	78	2.820	1.266	6.282	0.011
	APACHE II					
	< 19	129	Ref.			NA
	≥ 19	123	1.578	0.676	3.683	0.292
	Urinary Tract	37	0.201	0.057	0.707	0.012
	Skin or Cutaneous Sites	19	3.434	0.981	12.023	0.054
	Completion of the administration of antibiotics within 1 hour	173	1.625	0.314	8.406	0.562
	Completion of the administration of antibiotics within 3 hours	205	0.249	0.040	1.552	0.136
	Respiratory support					
	Mechanical ventilation	173	2.821	0.997	7.981	0.051
	High-flow nasal oxygen	38	0.201	0.042	0.963	0.045
	Additional ICU support					
	Renal replacement therapy	101	3.429	1.538	7.645	0.003
	Red blood cell transfusion	93	0.618	0.271	1.409	0.252
	Platelet transfusion	50	1.384	0.549	3.492	0.491
	Fresh frozen plasma transfusion	58	1.477	.604	3.609	0.392
	Surgical source control	25	0.667	0.195	2.282	0.519
	Non-surgical source control	78	0.332	0.140	0.786	0.012
	Constant		0.133			0.002
9	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.518	1.049	6.042	0.039
	Intensivist to patient ratio					
	1 intensivist : 5 or fewer patients	165	Ref.			0.115
	1 intensivist : 6 to 8 patients	75	3.042	1.050	8.811	0.040

	1 intensivist : 12 or more patients	12	1.151	0.239	5.554	0.861
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.282	0.101	0.788	0.016
	Cardiovascular disease	78	2.010	0.905	4.464	0.086
	Solid malignant tumors	12	5.854	1.368	25.056	0.017
	SOFA					
	< 10	172	Ref.			NA
	≥ 10	78	2.858	1.287	6.346	0.010
	APACHE II					
	< 19	129	Ref.			NA
	≥ 19	123	1.590	0.683	3.700	0.282
	Urinary Tract	37	0.207	0.059	0.727	0.014
	Skin or Cutaneous Sites	19	3.541	1.009	12.428	0.048
	Completion of the administration of antibiotics within 3 hours	205	0.381	0.126	1.158	0.089
	Respiratory support					
	Mechanical ventilation	173	2.862	1.012	8.090	0.047
	High-flow nasal oxygen	38	0.200	0.042	0.954	0.043
	Additional ICU support					
	Renal replacement therapy	101	3.380	1.515	7.538	0.003
	Red blood cell transfusion	93	0.612	0.268	1.397	0.244
	Platelet transfusion	50	1.390	0.553	3.492	0.484
	Fresh frozen plasma transfusion	58	1.464	0.599	3.575	0.403
	Surgical source control	25	0.690	0.203	2.347	0.553
	Non-surgical source control	78	0.331	0.140	.784	0.012
	Constant		0.133			0.002
10	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.422	1.020	5.752	0.045
	Intensivist to patient ratio					
	1 intensivist : 5 or fewer patients	165	Ref.			0.106
	1 intensivist : 6 to 8 patients	75	3.115	1.077	9.013	0.036

	1 intensivist : 12 or more patients	12	1.195	0.250	5.713	0.824
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.279	0.100	0.778	0.015
	Cardiovascular disease	78	2.035	0.920	4.503	0.080
	Solid malignant tumors	12	5.880	1.367	25.293	0.017
	SOFA					
	< 10	172	Ref.			NA
	≥ 10	78	2.853	1.287	6.324	0.010
	APACHE II					
	< 19	129	Ref.			NA
	≥ 19	123	1.616	0.697	3.747	0.263
	Urinary Tract	37	0.205	0.058	.719	0.013
	Skin or Cutaneous Sites	19	3.452	1.002	11.897	0.050
	Completion of the administration of antibiotics within 3 hours	205	0.378	0.125	1.143	0.085
	Respiratory support					
	Mechanical ventilation	173	2.854	1.009	8.070	0.048
	High-flow nasal oxygen	38	0.205	0.043	0.977	0.047
	Additional ICU support					
	Renal replacement therapy	101	3.464	1.561	7.691	0.002
	Red blood cell transfusion	93	0.599	0.264	1.358	0.220
	Platelet transfusion	50	1.394	0.556	3.494	0.479
	Fresh frozen plasma transfusion	58	1.467	0.601	3.585	0.400
	Non-surgical source control	78	0.333	0.140	0.789	0.012
	Constant		0.129			0.001
11	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.581	1.108	6.011	0.028
	Intensivist to patient ratio					
	1 intensivist : 5 or fewer patients	165	Ref.			0.109
	1 intensivist : 6 to 8 patients	75	3.074	1.064	8.886	0.038
	1 intensivist : 12 or	12	1.112	0.237	5.207	0.893

	more patients					
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.269	0.097	0.747	0.012
	Cardiovascular disease	78	1.999	0.905	4.414	0.087
	Solid malignant tumors	12	5.912	1.384	25.250	0.016
	SOFA					
	< 10	172	Ref.			NA
	≥ 10	78	2.913	1.318	6.435	0.008
	APACHE II					
	< 19	129	Ref.			NA
	≥ 19	123	1.596	0.691	3.687	0.274
	Urinary Tract	37	0.215	0.062	0.746	0.015
	Skin or Cutaneous Sites	19	3.527	1.029	12.091	0.045
	Completion of the administration of antibiotics within 3 hours	205	0.369	0.122	1.111	0.076
	Respiratory support					
	Mechanical ventilation	173	2.892	1.022	8.188	0.045
	High-flow nasal oxygen	38	0.203	0.043	0.963	0.045
	Additional ICU support					
	Renal replacement therapy	101	3.524	1.591	7.808	0.002
	Platelet transfusion	50	0.646	0.294	1.419	0.277
	Fresh frozen plasma transfusion	58	1.567	0.657	3.735	0.311
	Non-surgical source control	78	0.322	0.136	0.759	0.010
	Constant		0.133			0.002
12	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.431	1.058	5.588	0.036
	Intensivist to patient ratio					
	1 intensivist : 5 or fewer patients	165	Ref.			0.117
	1 intensivist : 6 to 8 patients	75	3.020	1.051	8.677	0.040
	1 intensivist : 12 or more patients	12	1.182	0.252	5.547	0.833
	Training program in ICU					
	No	50	Ref.			NA

	Yes	202	0.298	0.111	0.803	0.017
	Cardiovascular disease	78	1.969	0.897	4.322	0.091
	Solid malignant tumors	12	5.678	1.355	23.795	0.018
	SOFA					
	< 10	172	Ref.			NA
	≥ 10	78	3.035	1.378	6.684	0.006
	APACHE II					
	< 19	129	Ref.			NA
	≥ 19	123	1.571	0.683	3.609	0.288
	Urinary Tract	37	0.241	0.073	0.800	0.020
	Skin or Cutaneous Sites	19	3.518	1.019	12.146	0.047
	Completion of the administration of antibiotics within 3 hours	205	.354	0.118	1.060	0.064
	Respiratory support					
	Mechanical ventilation	173	2.888	1.021	8.170	0.046
	High-flow nasal oxygen	38	0.194	0.041	0.912	0.038
	Additional ICU support					
	Renal replacement therapy	101	3.725	1.694	8.192	0.001
	Platelet transfusion	50	0.715	0.334	1.531	0.388
	Non-surgical source control	78	0.333	0.142	0.781	0.011
	Constant		0.132			0.001
13	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.375	1.035	5.448	0.041
	Intensivist to patient ratio					
	1 intensivist : 5 or fewer patients	165	Ref.			0.123
	1 intensivist : 6 to 8 patients	75	2.983	1.037	8.576	0.043
	1 intensivist : 12 or more patients	12	1.189	.252	5.610	0.827
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.298	0.111	0.801	0.016
	Cardiovascular disease	78	1.987	0.907	4.352	0.086
	Solid malignant tumors	12	5.332	1.285	22.125	0.021
	SOFA					
	< 10	172	Ref.			NA

	≥ 10	78	2.958	1.347	6.497	0.007
	APACHE II					
	< 19	129	Ref.			NA
	≥ 19	123	1.601	0.697	3.680	0.268
	Urinary Tract	37	0.244	0.075	0.798	0.020
	Skin or Cutaneous Sites	19	3.524	1.029	12.061	0.045
	Completion of the administration of antibiotics within 3 hours	205	0.370	0.126	1.088	0.071
	Respiratory support					
	Mechanical ventilation	173	2.736	0.976	7.669	0.056
	High-flow nasal oxygen	38	0.203	0.043	0.950	0.043
	Additional ICU support					
	Renal replacement therapy	101	3.332	1.586	7.000	0.001
	Non-surgical source control	78	0.328	0.140	0.767	0.010
	Constant		0.129			0.001
14	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.474	1.085	5.643	0.031
	Intensivist to patient ratio					
	1 intensivist : 5 or fewer patients	165	Ref.			0.165
	1 intensivist : 6 to 8 patients	75	2.591	0.945	7.101	0.064
	1 intensivist : 12 or more patients	12	0.929	0.212	4.076	0.923
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.287	0.107	0.769	0.013
	Cardiovascular disease	78	2.140	.989	4.630	0.053
	Solid malignant tumors	12	4.904	1.197	20.082	0.027
	SOFA					
	< 10	172	Ref.			NA
	≥ 10	78	3.194	1.473	6.925	0.003
	Urinary Tract	37	0.259	0.080	0.838	0.024
	Skin or Cutaneous Sites	19	3.642	1.079	12.295	0.037
	Completion of the administration of antibiotics within 3 hours	205	0.360	0.123	1.055	0.063

	Respiratory support					
	Mechanical ventilation	173	3.156	1.159	8.593	0.025
	High-flow nasal oxygen	38	0.211	0.045	0.992	0.049
	Additional ICU support					
	Renal replacement therapy	101	3.504	1.675	7.331	0.001
	Non-surgical source control	78	0.311	0.134	0.719	0.006
	Constant		0.151			0.002
15	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.580	1.167	5.703	0.019
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.297	0.110	0.802	0.017
	Cardiovascular disease	78	2.088	0.973	4.478	0.059
	Solid malignant tumors	12	4.586	1.141	18.434	0.032
	SOFA					
	< 10	172	Ref.			NA
	≥ 10	78	2.840	1.347	5.985	0.006
	Urinary Tract	37	0.277	0.087	0.880	0.030
	Skin or Cutaneous Sites	19	2.937	0.928	9.289	0.067
	Completion of the administration of antibiotics within 3 hours	205	0.326	0.115	0.923	0.035
	Respiratory support					
	Mechanical ventilation	173	2.765	1.041	7.345	0.041
	High-flow nasal oxygen	38	0.432	0.116	1.618	0.213
	Additional ICU support					
	Renal replacement therapy	101	3.302	1.604	6.799	0.001
	Non-surgical source control	78	0.382	.174	0.840	0.017
	Constant		0.200			0.006
16	University affiliation					
	No	153	Ref.			NA
	Yes	99	2.562	1.164	5.639	0.019
	Training program in ICU					
	No	50	Ref.			NA
	Yes	202	0.267	0.100	0.713	0.008

	Cardiovascular disease	78	2.047	0.954	4.391	0.066
	Solid malignant tumors	12	4.630	1.130	18.970	0.033
	SOFA					
	< 10	172	Ref.			NA
	≥ 10	78	2.801	1.332	5.891	0.007
	Urinary Tract	37	0.276	0.087	0.878	0.029
	Skin or Cutaneous Sites	19	3.074	0.982	9.629	0.054
	Completion of the administration of antibiotics within 3 hours	205	0.344	0.122	0.970	0.044
	Respiratory support					
	Mechanical ventilation	173	3.086	1.180	8.072	0.022
	Additional ICU support					
	Renal replacement therapy	101	3.433	1.669	7.058	0.001
	Non-surgical source control	78	0.385	0.175	0.842	0.017
	Constant		0.182			0.004

Abbreviations: **AOR**: adjusted odds ratio; **APACHE II**, Acute Physiology and Chronic Health Examination II; **CI**: confidence interval; **ICU**, intensive care unit; **NA**: not available; **Ref.**, reference; **SOFA**, Sequential (Sepsis-Related) Organ Failure Assessment.

Table S19. Breakdown of missing data

Variables	Number of patients with missing data
Hospital characteristics	
Type of hospital	0
University affiliation	0
ICU characteristics	
Nature of ICU	0
Type of ICU	0
Nurse to patient ratio	0
Intensivist to patient ratio	0
Training programme in ICU	0
Baseline characteristics	
Age (year)	0
Sex	0
Collection batch	0

Admission type	0
Admission source	0
Comorbidities	0
Vital signs (on admission into ICU)	
GCS	1
HR (beats per min)	0
Temperature (°C)	0
MBP (mmHg), mean(SD)	0
SBP (mmHg), mean (SD)	0
RR (breaths per min), median (IQR)	0
Blood investigations	
Total WBC ($\times 10^9/L$)	0
PLT ($\times 10^9/L$)	0
Hb (g/dL)	1
Hct (%)	0
K ⁺ (mmol/L)	0
Na ⁺ (mmol/L)	0
Creatinine ($\mu\text{mol/L}$)	0
Bilirubin ($\mu\text{mol/l}$)	20
pH, mean (SD)	3
PaO ₂ (mmHg)	8
FiO ₂ (mmHg)	7
PaO ₂ /FiO ₂ ratio	9
Severity of illness scores	
qSOFA	0
SIRS	0
SOFA	2
APACHE II	0
Site of Infection	
Respiratory	0
Urinary tract	0
Abdominal	0

Neurological	0
Bones or joints	0
Skin or cutaneous sites	0
Intravascular catheter	0
Infective endocarditis	0
Primary bacteraemia	0
Systemic	0
Measurements around time zero	
Blood culture	0
Lactate measurement	0
Antibiotic administration	0
Fluid bolus	2
Resources used in ICU (anytime during ICU stay)	
Vasopressors/Intropes	0
Mechanical ventilation	1
Noninvasive ventilation	1
High-flow nasal cannula	1
Renal replacement therapy	1
Red blood cell transfusion	1
Platelet transfusion	1
Fresh frozen plasma transfusion	1
Surgical source control	1
Non-surgical source control	1
In-hospital time course (DD/MM/YY (HHMM))	
Admission date to the hospital	0
Admission date to the ICU	0
Time zero	0
Time of blood culture	2
Time of lactate measurement	1
Time of antibiotic administration	2

Time of starting vasopressor	3
Time of first source control measure	0
Discharge date from current ICU stay or death date in your current ICU stay	1
Discharge date from current hospital stay or death date in your current hospital stay	1