Supplementary Data

Supplementary Table 1. The comparison of HBP among different sites.

	Infection	Sepsis	Septic shock	*P*
Abdomen, median (IQR)	24.8 (14.0–74.5)	44.7 (25.9–108.0)	78.0 (38.6–156.3.0)	＜0.001
Respiratory median (IQR)	23.2 (10.8–55.3)	55.2 (37.8–73.9)	55.7 (14.1–300)	＜0.001
Blood median (IQR)	9.5*	80.4 (45.1–115.6)	207.6 (176.6–238.6)	＜0.001
Skin and soft tissues median (IQR)	25.5 (19.1–37.3)	27.3 (14.6–41.4)	61.8 (36.2–136)	0.027
Other median (IQR)	18.3 (14.5–22.5)	45.6 (27.0–64.3)	22.6 (19.5–86.7)	0.007
Multi-infection site median (IQR)	22.7 (20.9–32.8)	37.7 (18.0–110.6)	39.0 (23.7–134.6)	0.333

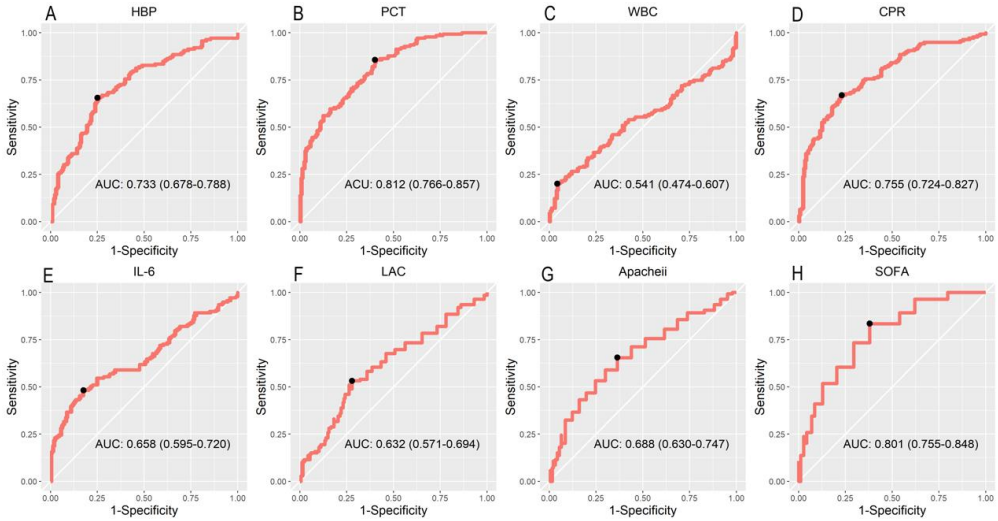
* Only one patient with bloodstream infection in the infection group, IQR: interquartile range.

Supplementary Table 2. Univariate and multivariate logistic regression analysis of risk factors for sepsis diagnosis.

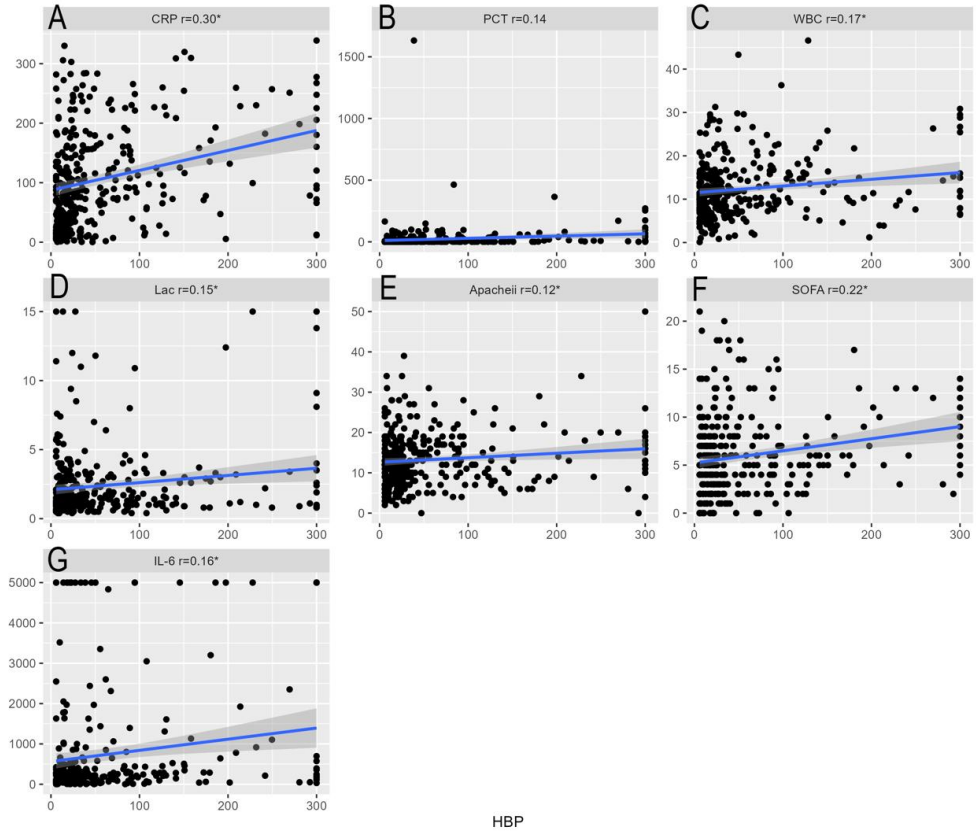
Variable	Univariate logistic regression analysis		Multivariate logistic regression analysis	
	OR (95%CI)	*P*	OR (95%CI)	*P*
Age	1.009 (0.993, 1.026)	0.276		
Sex	1.169 (0.683, 1.999)	0.569		
Hypertension	0.795 (0.450, 1.402)	0.427		
Diabetes	0.801 (0.418, 1.538)	0.505		
Cardiovascular	0.538 (0.288, 1.182)	0.135		
Liver disease	1.572 (0.411, 6.014)	0.509		
Malignant tumor	1.471 (0.861, 2.514)	0.158		
Other disease	0.998 (0.582, 1.712)	0.994		
PCT	1.068 (1.037, 1.101)	＜0.001	1.034 (1.009, 1.060)	0.009
CRP	1.014 (1.009, 1.018)	＜0.001	1.011 (1.006, 1.016)	<0.001
HBP	1.011 (1.006, 1.016)	＜0.001	1.006 (1.000, 1.012)	0.041
IL-6	1.001 (1.000, 1.001)	＜0.001	1.001 (1.000, 1.001)	0.013
LAC	1.198 (1.062, 1.352)	0.003		
WBC	1.034 (0.992, 1.076)	0.111		
APACHE II	1.108 (1.067, 1.152)	＜0.001		

SOFA	1.383 (1.276, 1.501)	<0.001	1.252 (1.110, 1.412)	<0.001

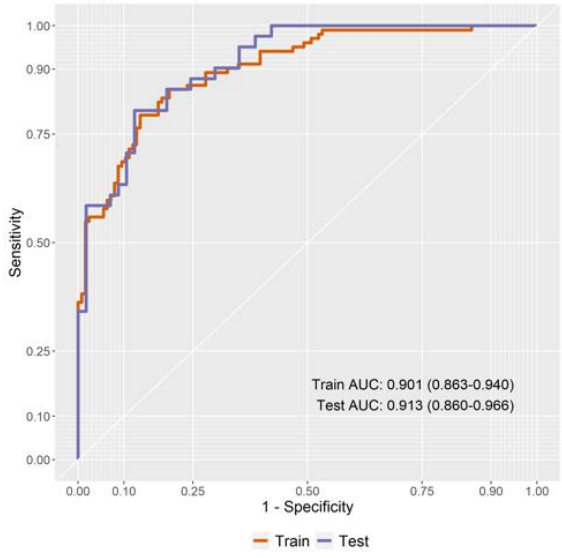
APACHE II: acute physiology and chronic health evaluation II, CRP: C-reactive protein, HBP: heparin-binding protein, LAC: blood lactic acid, PCT: procalcitonin, IL-6: interleukin-6, SOFA: sequential organ failure assessment, WBC: white blood cell count.



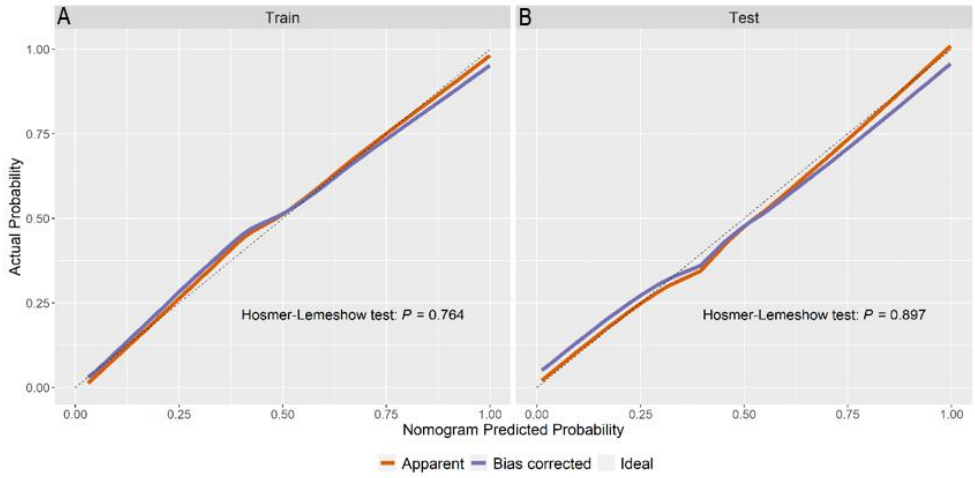
Supplementary Figure 1. ROC curves for biomarkers in distinguishing sepsis from non-sepsis. A: HBP, B: PCT, C: WBC, D: CRP, E: IL-6, F: LAC, G: APACHE II, H: SOFA. APACHE II: acute physiology and chronic health evaluation II, CRP: C-reactive protein, HBP: heparin-binding protein, LAC: blood lactic acid, PCT: procalcitonin, IL-6: interleukin-6, SOFA: sequential organ failure assessment, WBC: white blood cell count.



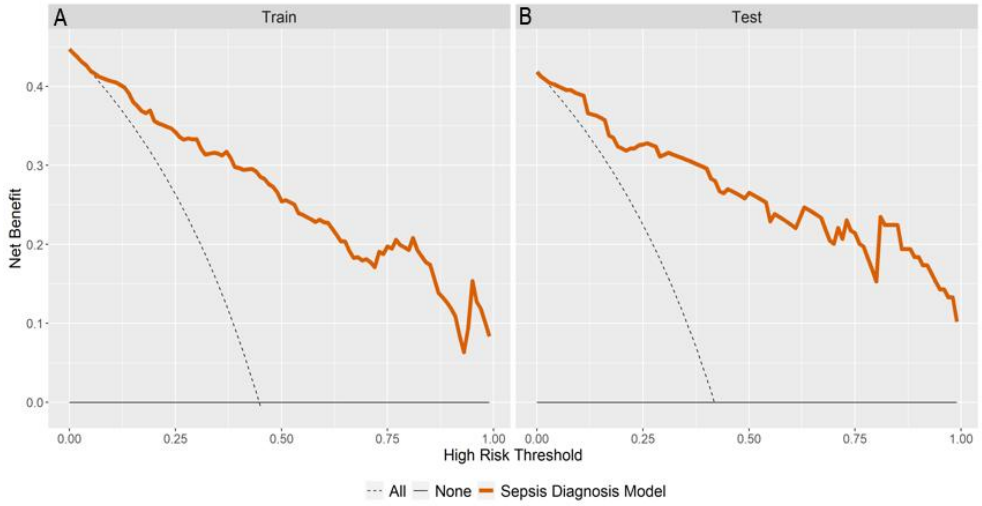
Supplementary Figure 2. The correlations of HBP with CRP (A), PCT (B), WBC (C), LAC (D), APACHE II (E), SOFA (F), and IL-6(G). APACHE II: acute physiology and chronic health evaluation II, CRP: C-reactive protein, LAC: blood lactic acid, PCT: procalcitonin, IL-6: interleukin-6, SOFA: sequential organ failure assessment, WBC: white blood cell count.



Supplementary Figure 3. ROC curve analysis of the sepsis training model and test model.



Supplementary Figure 4. Calibration test of the sepsis diagnostic model. A: training set, B: test set.



Supplementary Figure 5. Decision curve analysis (DCA) curve of the sepsis diagnostic model. A: training set, B: test set. The black solid line is the net benefit of treating no patients, the black dashed line is the net benefit of treating all patients, the orange solid line is the net benefit of treating patients according to the sepsis diagnostic model. Throughout the entire threshold range(x-axis), the sepsis diagnostic model surpasses both Treat-all and Treat-no.