

## Supplementary material

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*Zhu X, Hu X, Qin X, et al. An elevated Fibrosis-4 score is associated with poor clinical outcomes in patients with sepsis: an observational cohort study. Pol Arch Intern Med. 2020; 130: 1064-1073. doi:10.20452/pamw.15699*

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**Figure S1.** The diagnosis flowchart of Sepsis-3 criteria. qSOFA, quick Sequential Organ Failure Assessment; SOFA, Sequential Organ Failure Assessment.

**Table S1.** Comparison of baseline characteristics of final study cohort vs. missing data cohort.

**Table S2.** Subset analyses on the basis of albumin and bilirubin in the FIB-4-sepsis cohort.

**Figure S2.** Comparison of ROC curves between different models for 28-day mortality. (a) SOFA model and FIB-4-SOFA model, and (b) SAPS II model and FIB-4-SAPS II model. FIB-4, fibrosis-4; ROC, receiver operating characteristic; SAPS II, Simplified Acute Physiology Score II; SOFA, Sequential Organ Failure assessment.

**Table S3.** Cox regression analysis for 28-day mortality and 90-day mortality in the FIB-4-sepsis cohort.

**Table S4.** Association of FIB-4 with primary and secondary outcomes in the additional external validation.

**Table S1 Comparison of baseline characteristics of final study cohort vs. missing data cohort**

Characteristics	Final study cohort <sup>#</sup>	Missing data cohort <sup>#</sup>
	N = 1560	N = 1311
Gender (men/women)	768/792	659/652
Age (years)	67.54 (52.84–81.25)	69.21 (54.99–81.53)
≤ 40, n (%)	181 (11.6)	145 (11.1)
> 40, ≤ 60, n (%)	385 (24.7)	269 (20.5)
> 60, ≤ 80, n (%)	560 (35.9)	527 (40.2)
> 80, n (%)	434 (27.8)	370 (28.2)
Race		
White, n (%)	1127 (72.2)	994 (75.8)*
Black, n (%)	131 (8.4)	87 (6.6)
Hispanic, n (%)	52 (3.3)	46 (3.5)
Other, n (%)	250 (16.0)	184 (14.0)
Comorbidities		
Congestive heart failure, n (%)	359 (23.0)	287 (21.9)
Cardiac arrhythmias, n (%)	492 (31.5)	423 (32.3)
Hypertension, n (%)	873 (56.0)	754 (57.5)
Chronic pulmonary, n (%)	350 (22.4)	260 (19.8)
Diabetes, n (%)	430 (27.6)	319 (24.3)*
ICU interventions		
Vasopressor (first 24 hours), n (%)	448 (28.7)	363 (27.7)
Mechanical ventilation (first 24 hours), n (%)	695 (44.6)	685 (52.3)**
Renal replacement therapy, n (%)	33 (2.1)	10 (0.8)**
Severity of illness scores (first 24 hours)		
SOFA score	4.00 (3.00–6.00)	4.00 (2.00–5.00)**
SAPS II score	36.00 (29.00–44.00)	34.00 (27.00–42.00)**
Length of stay		
ICU LOS (days)	2.67 (1.61–5.13)	2.28 (1.29–4.79)**
Hospital LOS (days)	6.94 (4.28–12.03)	7.57 (4.66–11.90)
Outcomes		
28-day mortality, n (%)	229 (14.7)	120 (9.2)**
90-day mortality, n (%)	296 (19.0)	159 (12.1)**
In-hospital mortality, n (%)	189 (12.1)	84 (6.4)**

<sup>#</sup>, FIB-4-sepsis cohort; \*, P-value < 0.05; \*\*, P-value < 0.01. Data were expressed as median (interquartile range) or frequency (percentage). FIB-4, fibrosis-4; ICU, intensive care unit; LOS, length of stay; SAPS II, Simplified Acute Physiology Score II; SOFA, Sequential Organ Failure Assessment.

**Table S2 Subset analyses on the basis of albumin and bilirubin in the FIB-4-sepsis cohort**

	28-day mortality			90-day mortality			In-hospital mortality			RRT		
	OR	P-value	95%CI	OR	P-value	95%CI	OR	P-value	95%CI	OR	P-value	95%CI
<b>Low albumin group</b> (≤ 3.5 g/dL)												
Quartile 1	Reference			Reference			Reference			Reference		
Quartile 2	1.821	0.10	0.893–3.714	1.836	0.06	0.972–3.468	2.857	<b>0.02</b>	1.174–6.955	0.924	0.94	0.129–6.635
Quartile 3	3.078	<b>0.001</b>	1.569–6.039	3.328	<b>&lt;0.001</b>	1.822–6.077	5.350	<b>&lt;0.001</b>	2.297–12.461	2.350	0.31	0.449–12.290
Quartile 4	3.770	<b>&lt;0.001</b>	1.956–7.269	3.662	<b>&lt;0.001</b>	2.027–6.617	6.290	<b>&lt;0.001</b>	2.737–14.451	5.383	<b>0.03</b>	1.186–24.425
<b>High albumin group</b> (> 3.5 g/dL)												
Quartile 1	Reference			Reference			Reference			Reference		
Quartile 2	1.566	0.34	0.630–3.893	1.500	0.35	0.647–3.480	1.779	0.23	0.695–4.552	3.442	0.29	0.352–33.647
Quartile 3	1.419	0.46	0.562–3.583	1.627	0.25	0.709–3.733	1.133	0.81	0.409–3.143	1.124	0.94	0.069–18.209
Quartile 4	2.114	0.10	0.857–5.218	1.853	0.15	0.794–4.326	1.975	0.16	0.757–5.158	2.725	0.42	0.243–30.576
<b>Abnormal bilirubin group</b> (> 1 mg/dL)												
Quartile 1	Reference			Reference			Reference			Reference		
Quartile 2	1.253	0.70	0.398–3.942	1.286	0.64	0.448–3.688	1.400	0.60	0.402–4.876	0.678	0.79	0.042–11.057
Quartile 3	1.919	0.23	0.660–5.578	2.222	0.11	0.838–5.892	2.253	0.17	0.706–7.192	1.806	0.61	0.184–17.766
Quartile 4	1.329	0.59	0.471–3.752	1.813	0.21	0.711–4.623	1.587	0.42	0.512–4.920	2.199	0.47	0.259–18.649
<b>Normal bilirubin group</b> (≤ 1 mg/dL)												
Quartile 1	Reference			Reference			Reference			Reference		
Quartile 2	1.624	0.07	0.965–2.736	1.553	0.06	0.975–2.472	1.718	0.07	0.953–3.099	2.771	0.23	0.533–14.394
Quartile 3	2.419	<b>0.001</b>	1.471–3.979	2.484	<b>&lt;0.001</b>	1.596–3.867	2.649	<b>0.001</b>	1.515–4.634	2.892	0.21	0.557–15.027
Quartile 4	4.073	<b>&lt;0.001</b>	2.479–6.693	3.793	<b>&lt;0.001</b>	2.418–5.951	4.258	<b>&lt;0.001</b>	2.440–7.431	7.847	<b>0.008</b>	1.702–36.179

The significant P-value was indicated in bold. CI, confidence interval; FIB-4, fibrosis-4; OR, odds ratio; RRT, renal replacement therapy.

**Table S3 Cox regression analysis for 28-day mortality and 90-day mortality**

<b>FIB-4-sepsis cohort</b>	<b>28-day mortality</b>			<b>90-day mortality</b>		
	<b>HR</b>	<b>P-value</b>	<b>95%CI</b>	<b>HR</b>	<b>P-value</b>	<b>95%CI</b>
Quartile 1	Reference			Reference		
Quartile 2	1.896	<b>0.02</b>	1.115–3.226	1.585	<b>0.046</b>	1.008–2.493
Quartile 3	2.034	<b>0.006</b>	1.225–3.378	1.670	<b>0.02</b>	1.087–2.565
Quartile 4	2.315	<b>0.001</b>	1.388–3.862	1.885	<b>0.004</b>	1.220–2.912

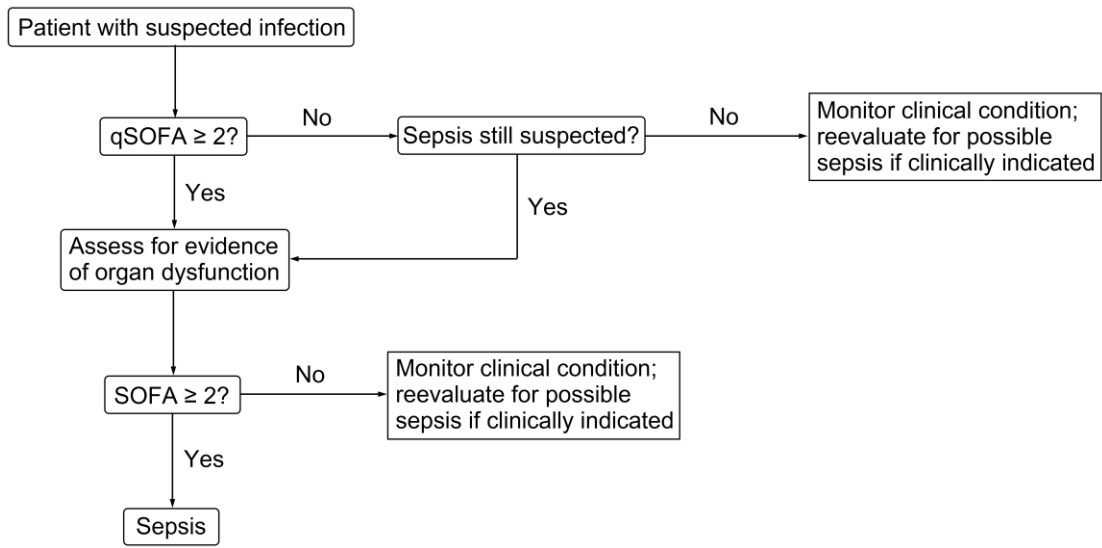
The significant P-value was indicated in bold. CI, confidence interval; FIB-4, fibrosis-4; HR, hazard ratio.

**Table S4 Association of FIB-4 with primary and secondary outcomes in the additional external validation**

FIB-4-sepsis cohort	28-day mortality			90-day mortality			RRT		
	OR	P-value	95%CI	OR	P-value	95%CI	OR	P-value	95%CI
Low FIB-4	Reference			Reference			Reference		
High FIB-4	11.900	<b>0.03</b>	1.272–111.351	15.111	<b>0.02</b>	1.624–140.580	9.000	<b>0.01</b>	1.562–51.870

The significant P-value was indicated in bold. Due to the existence of some patients who gave up treatment and were discharged from the hospital, we did not analyze in-hospital mortality as an outcome. According to the median value, the cohort was equally divided into low FIB-4 and high FIB-4 groups. CI, confidence interval; FIB-4, fibrosis-4; OR, odds ratio; RRT, renal replacement therapy.

**Figure S1**



**Figure S2**

