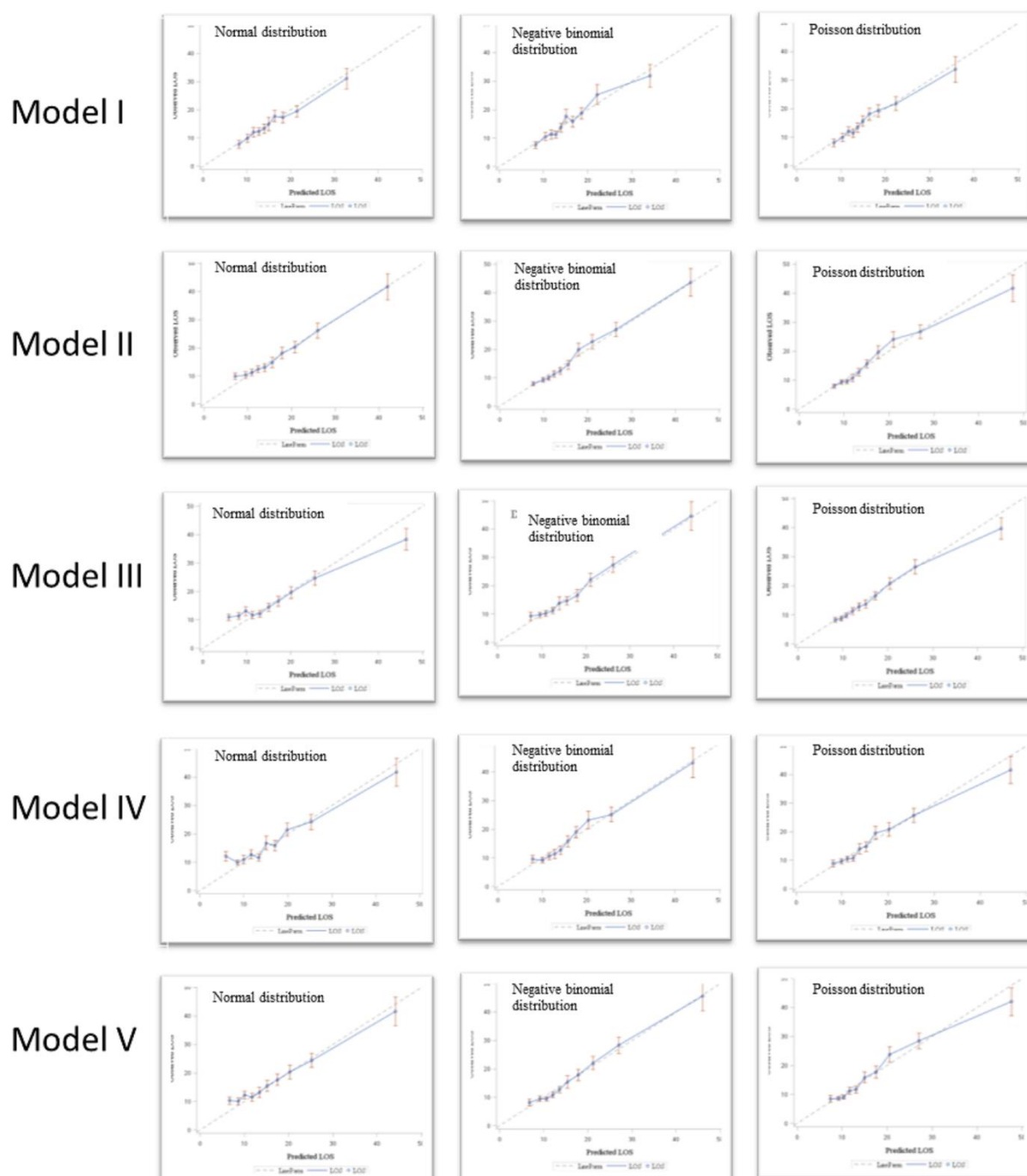
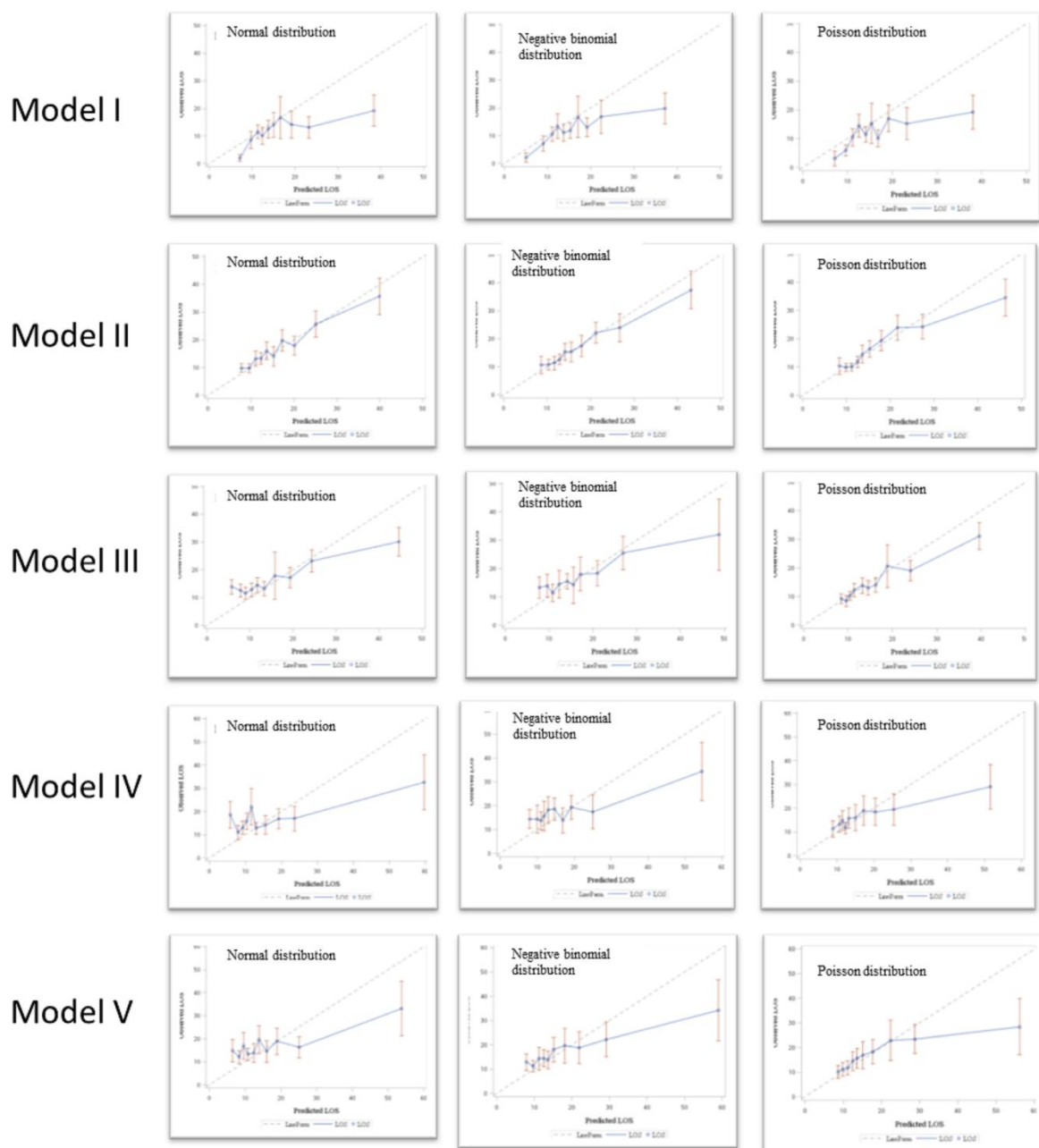


Supplemental Data

Supplemental Figure 1. Calibration curves of the generalized linear model in predicting the length of hospitalization in the derivation cohort.



Supplemental Figure 2. Calibration curves of the generalized linear model in predicting the length of hospitalization in the validation cohort



Supplemental Table 1. Details in component I, II, III, and IV

I	II	III	IV
Patient demographic	Patient demographic	Bacteremia severity at onset	Bacteremia severity at day 3
Age	Age	Body temperature	Body temperature
Gender	Gender	Shock	Shock
Body mass index	Body mass index	Receipt of mechanical ventilation	Receipt of mechanical ventilation
Nursing-home resident	Nursing-home resident	Cardiac arrest	Cardiac arrest
Bed-ridden status	Bed-ridden status	Mental status	Mental status
Previous events within 4 weeks before bacteremia onset	Previous events within 4 weeks before bacteremia onset	Laboratory data at onset	Laboratory data at day 3
Hospitalization	Hospitalization	White blood count and classification	White blood count and classification
Chemotherapy	Chemotherapy	Hemoglobin	Hemoglobin
Immunotherapy	Immunotherapy	Platelet count	Platelet count
Invasive procedure	Invasive procedure	Blood urea nitrogen	Blood urea nitrogen
Surgery	Surgery	Serum creatinine	Serum creatinine
Comorbidity type	Comorbidity type		
Comorbid severity (McCabe classification)	Comorbid severity (McCabe classification)		
Tentative diagnosis for infections	Bacteremia characteristic		
	Polymicrobial bacteremia		
	Complicated bacteremia		
	Source of bacteremia		

	Causative microorganism		
	Growth number on culture bottle		

Supplemental Table 2. Definitions in the component V.

Body temperature (BT)			Shock			Mechanical ventilation			Cardiac arrest			Mental status		
	Onset	Day 3		Onset	Day 3		Onset	Day 3		D0	D3		Onset	Day 3
Improved BT	2	1	Improved hemodynamics	1	0	Successful weaning	1	0	Arrest at day 3	Any	1	Improved consciousness	4	0, 1, or 2
	2	0							No arrest at day 3	Any	0		2	0 or 1
	1	0	Stationary shock	1	1	Ventilation dependence	1	1	Appeared arrest	0	1		1	0
Stationary BT	2	2	Deteriorated hemodynamics	0	1	Deteriorated respiration	0	1	Reference	0	0	Stationary consciousness	4	4
	1	1							1: cardiac arrest				2	2
Deteriorated BT	1	2	Reference	0	0	Reference	0	0	0: no episode of arrest				1	1
	0	1	1: systolic blood pressure < 90 mmHg or the need for inotropic agents to maintain blood pressure			1: receipt of mechanical ventilation						Deteriorated consciousness	0	1, 2, or 4
Reference	0	0	0: not fulfilling above rules			0: no need of mechanical ventilation							1	2 or 4
2: $\leq 35^{\circ}\text{C}$ or $\geq 40^{\circ}\text{C}$													2	4
1: $35.1\text{--}36.0$ or $39.0\text{--}39.9^{\circ}\text{C}$												Reference	0	0
0: $36.1\text{--}38.9^{\circ}\text{C}$												4: comatose		
												2: stuporous		
												1: disoriented		
												0: alerted		

Leukocytosis			Leukopenia			Bandemia			Neutropenia			Thrombocytopenia		
	Onset	Day 3		Onset	Day 3		Onset	Day 3		Onset	Day 3		Onset	Day 3
Subsided	1	0	Subsided	1	0	Subsided	1	0	Subsided	1	0	Subsided	1	0
Stationary	1	1	Stationary	1	1	Stationary	1	1	Stationary	1	1	Stationary	1	1
Deteriorated	0	1	Deteriorated	0	1	Deteriorated	0	1	Deteriorated	0	1	Deteriorated	0	1
Reference	0	0	Reference	0	0	Reference	0	0	Reference	0	0	Reference	0	0
1: blood leucocyte > 9000 /mm ³			1: blood leucocyte < 4000 /mm ³			1: band form $\geq 10\%$ of leucocytes			1: absolute neutrophile count < 500 /mm ³			1: blood platelet < 150000 /mm ³		
0: blood leucocyte ≤ 9000 /mm ³			0: blood leucocyte ≥ 4000 /mm ³			0: band form < 10% of leucocytes			0: absolute neutrophile count ≥ 500 /mm ³			0: blood platelet ≥ 150000 /mm ³		

Supplemental Table 3. Model-I predictors of 30-day mortality in overall 3639 patients (derivation cohort)

Variable	Adjusted OR (95% C.I.)	<i>P</i> values
Nursing-home resident	3.77 (2.83 – 5.07)	<0.001
Body mass index <18.5	1.62 (1.20 – 2.17)	0.001
Previous hospitalization	1.80 (1.29 – 2.51)	<0.001
Fatal comorbidities (McCabe classification)	2.33 (1.73 – 3.13)	<0.001
Comorbid Haemato-oncology	1.92 (1.43 – 2.58)	<0.001
Bacteremia severity at onset (day 0)		
Shock	7.05 (4.18 – 11.90)	<0.001
Mechanical ventilation	2.88 (2.09 – 3.99)	<0.001

Supplemental Table 4. Model-II predictors of 30-day mortality in 3479 patients with survival ≥ 3 days (derivation cohort).

Variable	Adjusted OR (95% C.I.)	<i>P</i> values
Fatal comorbidities (McCabe classification)	2.85 (1.96 – 4.13)	<0.001
Polymicrobial bacteremia	2.26 (1.50 – 3.41)	<0.001
Complicated bacteremia	1.91 (1.30 – 2.82)	0.001
Bacteremia severity at day 3		
Conscious unclear	145.97 (82.76 – 257.44)	<0.001
Body temperature <35C or ≥ 40 C	18.73 (7.83 – 44.81)	<0.001
Shock	3.20 (2.03 – 5.05)	<0.001
Mechanical ventilation	1.59 (1.06 – 2.39)	0.03
Laboratory data at day 3		
Neutropenia	2.52 (1.40 – 4.54)	0.002
Thrombocytopenia	1.85 (1.29 – 2.66)	0.001

Supplemental Table 5. Model-III predictors of 30-day mortality in 3479 patients with survival ≥ 3 days (derivation cohort).

Variable	Adjusted OR (95% CI)	<i>P</i> value
Patient demographic		
Body mass index <18.5	2.14 (1.54 – 2.96)	<0.001
Nursing-home residence	1.84 (1.14 – 2.96)	0.01
The elderly	1.37 (1.02 – 1.84)	0.04
Previous hospitalization	1.66 (1.23 – 2.25)	0.001
Source of bacteremia		
Mycotic aneurysm	8.13 (2.21 – 30.01)	0.002
Infective endocarditis	2.68 (1.42 – 5.04)	0.002
Pneumonia	2.63 (1.84 – 3.75)	<0.001
Intraabdominal infection	1.65 (1.07 – 2.54)	0.02
Urinary tract infection	0.60 (0.40 – 0.92)	0.02
Causative microorganism of anaerobe	2.11 (1.10 – 4.07)	0.03
Fatal comorbidity	2.18 (1.56 – 3.03)	<0.001
Comorbidity		
Haemato-oncology	1.94 (1.40 – 2.70)	<0.001
Liver cirrhosis	1.67 (1.13 – 2.47)	0.01
Bacteremia severity from day 0 to day 3		
Body temperature		
Deteriorated	4.09 (2.82 – 5.94)	<0.001
Stationary	2.69 (1.75 – 4.15)	<0.001
Blood pressure		
Deteriorated hemodynamic	9.55 (1.49 – 61.21)	0.02
Stationary shock	6.65 (4.56 – 9.69)	<0.001
Deteriorated consciousness	8.25 (4.04 – 16.85)	<0.001
Deteriorated respiration	3.47 (1.75 – 6.87)	<0.001
Laboratory data from day 0 to day 3		
Stationary bandemia	1.48(1.02 – 2.14)	0.04
Thrombocytopenia		
Deteriorated	1.99(1.38 – 2.88)	<0.001
Stationary	1.71(1.12 – 2.60)	0.01

Supplemental Table 6. Model-IV predictors of 30-day mortality in 3479 patients with survival ≥ 3 days (derivation cohort).

Variable	Adjusted OR (95% CI)	<i>P</i> value
Patient demographic		
Body mass index <18.5	2.04 (1.47 – 2.83)	<0.001
Previous Hospitalization < 4 weeks	1.64 (1.21 – 2.23)	0.002
Source of bacteremia		
Mycotic aneurysm	9.20 (2.30 – 36.73)	0.002
Infective endocarditis	2.51 (1.33 – 4.74)	0.005
Pneumonia	2.41 (1.69 – 3.46)	<0.001
Intraabdominal infection	1.76 (1.13 – 2.72)	0.01
Urinary tract infection	0.62 (0.41 – 0.94)	0.03
Causative microorganism of anaerobes	2.13 (1.09 – 4.19)	0.03
Fatal comorbidities (McCabe classification)	2.18 (1.55 – 3.06)	<0.001
Comorbidity		
Haemato-oncology	2.11 (1.51 – 2.95)	<0.001
Liver cirrhosis	1.52 (1.02 – 2.26)	0.04
Bacteremia severity at onset		
Cardiac arrest	4.60 (2.13 – 9.93)	<0.001
Body temperature <35C or ≥ 40 C	2.26 (1.38 – 3.70)	0.001
Conscious, unclear	2.11 (1.49 – 2.98)	<0.001
Bacteremia severity from day 0 to day 3		
Deteriorated consciousness	11.21 (4.06 – 22.84)	<0.001
Stationary shock	5.18 (3.50 – 7.66)	<0.001
Body temperature		
Deteriorated	3.80 (2.62 – 5.52)	<0.001
Stationary	2.25 (1.44 – 3.52)	<0.001
Deteriorated respiration	3.04 (1.52 – 6.09)	0.002
Laboratory data from day 0 to day 3		
Thrombocytopenia		
Stationary	1.77(1.16 – 2.70)	0.009
Deteriorated	1.95(1.34 – 2.83)	0.001

Supplemental Table 7. Model-V predictors of 30-day mortality in 3479 patients with survival ≥ 3 days (derivation cohort).

Variable	Adjusted OR (95% CI)	<i>P</i> value
Patient demographic		
Nursing-home residence	2.04 (1.25 – 3.34)	0.005
Body mass index <18.5	1.99 (1.42 – 2.78)	<0.001
Previous Hospitalization	1.62 (1.19 – 2.22)	0.003
Complicated bacteremia	1.48 (1.06 – 2.07)	0.02
Source of bacteremia		
Pneumonia	2.75 (1.92 – 3.96)	<0.001
Urinary tract infection	0.55 (0.36 – 0.84)	0.006
Infective endocarditis	2.72 (1.45 – 5.12)	0.002
Mycotic aneurysm	8.53 (2.35 – 31.04)	0.001
Causative microorganism of anaerobes	2.11 (1.07 – 4.17)	0.03
Fatal comorbidity (McCabe classification)	2.34 (1.65 – 3.30)	<0.001
Comorbidity		
Haemato-oncology	1.94 (1.38 – 2.72)	<0.001
Liver cirrhosis	1.79 (1.22 – 2.63)	0.003
Bacteremia severity at day 3		
Body temperature <35C or ≥ 40 C	16.88 (8.25 – 34.55)	<0.001
Bacteremia severity from day 0 to day 3		
Deteriorated consciousness	16.25 (2.98 – 13.13)	<0.001
Blood pressure		
Deteriorated	6.52 (1.04 – 40.92)	0.046
Stationary shock	5.04 (3.37 – 7.54)	<0.001
Deteriorated respiration	4.04 (2.01 – 8.13)	<0.001
Deteriorated body temperature	2.73 (1.85 – 4.03)	<0.001
Laboratory data from day 0 to day 3		
Thrombocytopenia		
Deteriorated	2.01 (1.38 – 2.94)	<0.001
Stationary	1.74 (1.13 – 2.68)	0.01