

Online Appendices

Part1. The information of the earthquakes which contained in the West China Earthquake Patients Database

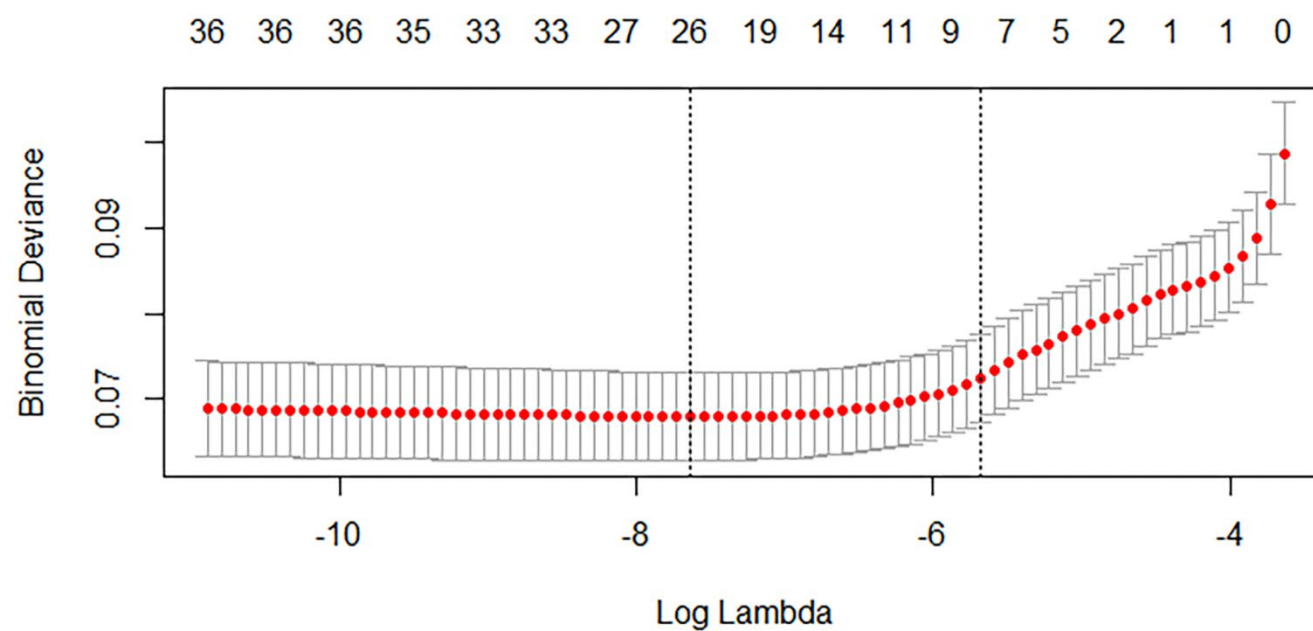
The West China Earthquake Patients Database included the patients in four earthquakes, which were Wenchuan Earthquake (2008), Yushu Earthquake (2010), Lushan Earthquake (2013), and Jiuzhai Earthquake (2017).

The introduction of the earthquakes in the database can be found in the website:

<https://www.cambridge.org/core/journals/disaster-medicine-and-public-health-preparedness/article/related-factors-associated-with-earthquake-inpatient-mortality/A74980F2DA2C7EAF25ACD2BAE8079804#supplementary-materials>

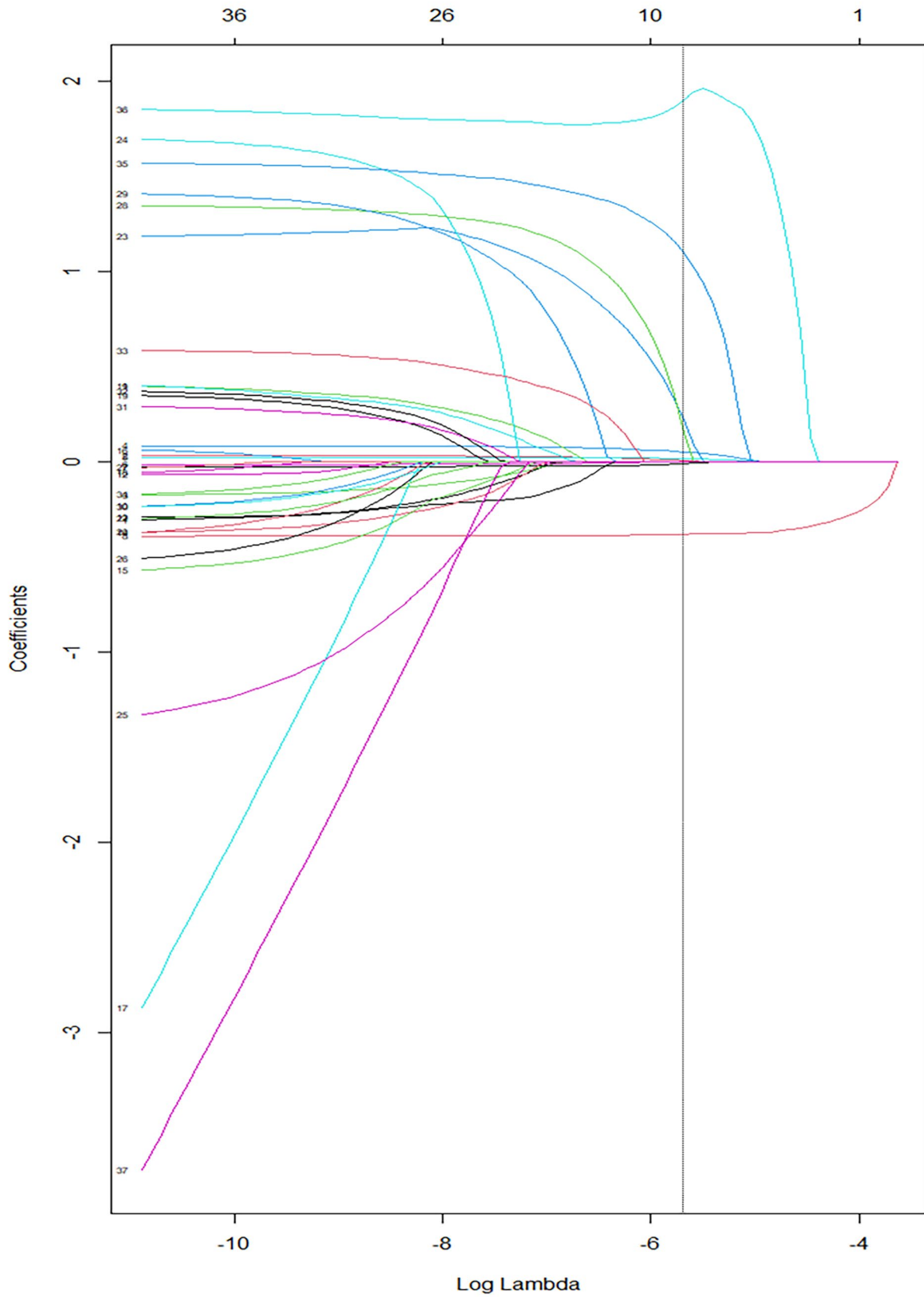
Part2. The results of the LASSO regression

(A) Cross-validation plot for the penalty term



In the LASSO regression, the lambda values ranged from 0.0000186 to 0.0263800 with a minimal binomial deviance achieved at 0.000483 (log lambda = -7.635) and more stringent value of 0.003407 (log lambda = -5.682). In Supplementary Part2A, the ordinate is the value of the binomial deviance, and the abscissa is the log lambda of the natural logarithm ($e=2.71828$) as the base. The number of variables selected is shown at the top of the figure. The left dotted line represents the log lambda at the lowest binomial deviance, which selected 26 variables. The right dotted line represents the largest log lambda that is still within one standard error of the minimum binomial deviance, which selected 9 variables. Nine variables are selected using the stricter penalty.

(B) Plots for LASSO regression coefficients over different values of the penalty parameter



The ordinate is the value of the coefficient, and the abscissa is the log lambda of the natural logarithm to the base e. The number of variables selected is shown at the top of the figure. The numbers at the left end of the curves are the code of each variable. The Figure

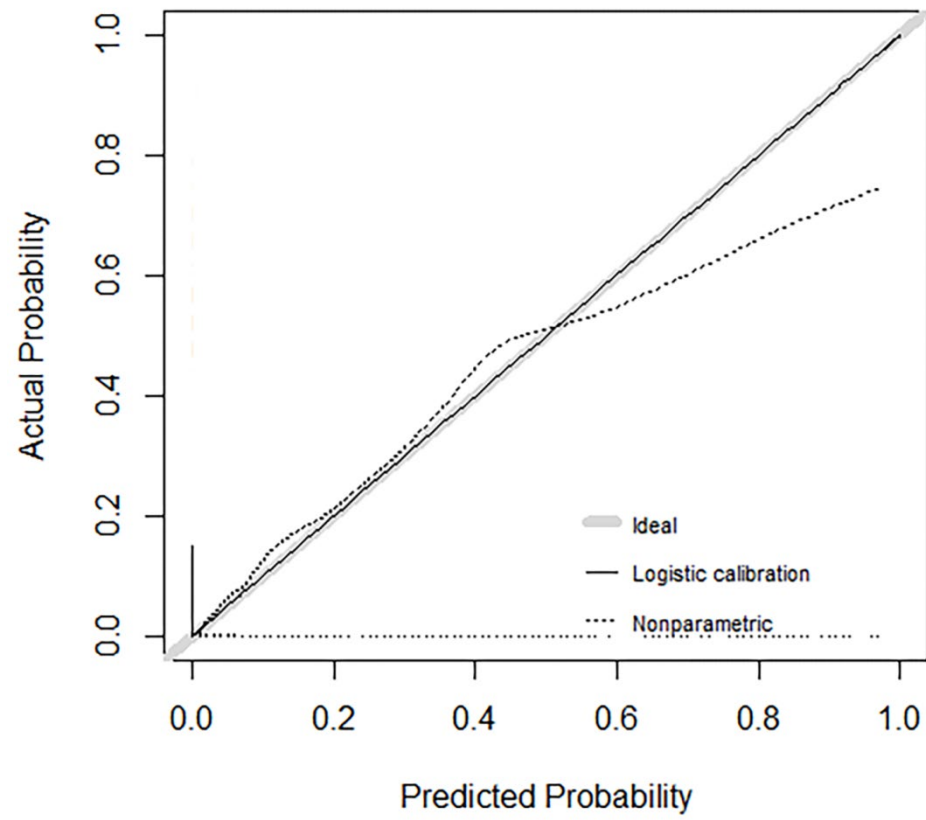
shows the results of all the variables included in the LASSO regression and their corresponding coefficients for the different penalty parameter values. At minimum lambda (minimum lambda = 0.0000186, and log minimum lambda = -10.892), all the variables are non-zero and remain in the model. As the penalty term increases, the coefficients of some variables quickly approach zero. As lambda increases to 0.003407(log lambda= -5.682), only nine variables remain in the model. Specifically, as lambda approaches 0.003407, the nine variables (X2, X4, X5, X7, X8, X23, X28, X35, and X36) confer the largest signal in the model. The description of each variable was list as follows:

The description of each variable		
Code in the Part 2 B	Variable	description
1	X1	Sex
2	X2*	Age
3	X3	Axillary temperature
4	X4*	respiratory rate
5	X5*	pulse rate
6	X6	systolic blood pressure
7	X7*	diastolic blood pressure
8	X8*	Glasgow Coma Scale
9	X9	Traumatic body region(head/neck)
10	X10	Traumatic body region(face)
11	X11	Traumatic body region(chest)
12	X12	Traumatic body region(abdomen/pelvis)
13	X13	Traumatic body region(extremities)
14	X14	Traumatic body region(external)
15	X15	Fracture
16	X16	Dislocation
17	X17	Sprains and strains
18	X18	Internal injuries
19	X19	Open wound
20	X20	Amputations
21	X21	Injuries to blood vessels
22	X22	Contusion/superficial injuries
23	X23*	Crush injuries
24	X24	Burn
25	X25	Nerve injuries
26	X26	Other injuries
27	X27	Hypertension
28	X28*	Coronary heart disease
29	X29	Deep vein thrombosis
30	X30	Stroke
31	X31	Diabetes
32	X32	Bedsore
33	X33	Chronic obstructive pulmonary disease
34	X34	Liver cirrhosis
35	X35*	Malignant tumor
36	X36*	Chronic kidney disease
37	X37	Wound infection

*The variables were selected by the LASSO regression.

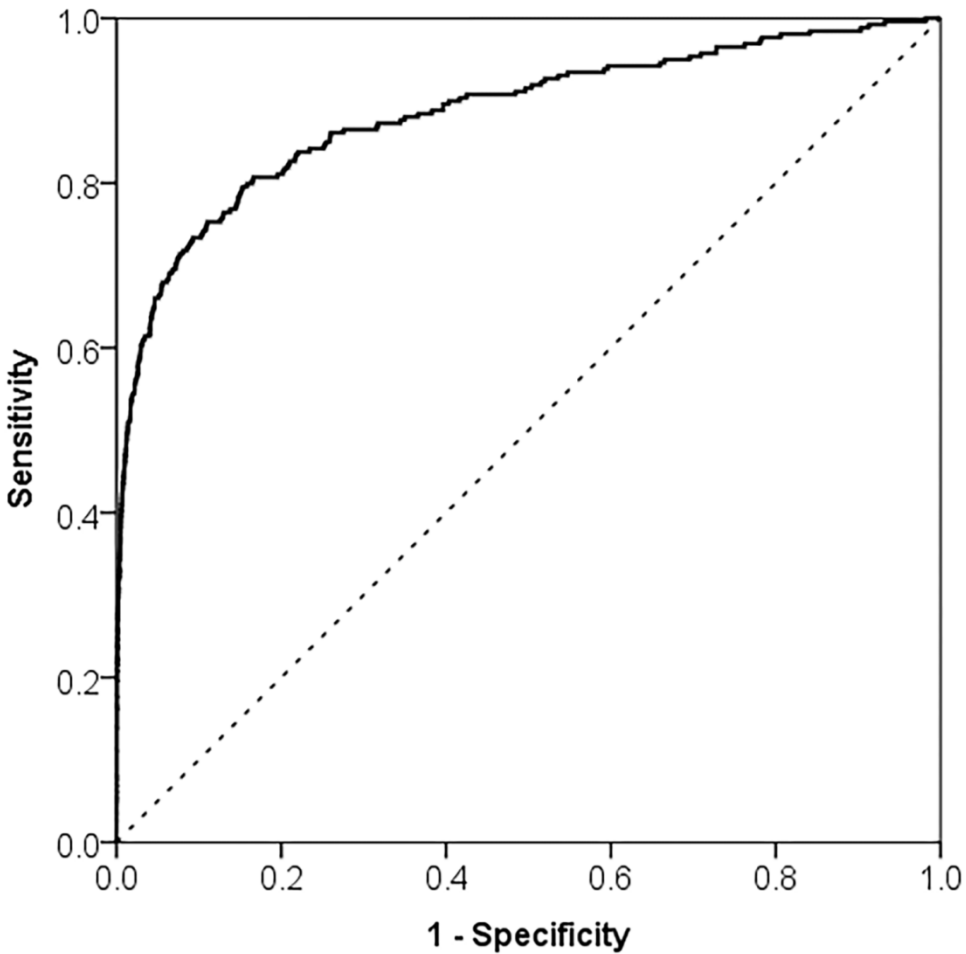
Part3. The assessment of the nomogram

(A) Calibration curves of the nomogram for predicting in-hospital death of adult trauma patients in earthquake



Data on predicted situation were plotted on the x-axis, while data on actual situation were plotted on the y-axis. The diagonal solid line indicates the ideal nomogram, in which actual and predicted probabilities are identical. The dotted line indicates the actual nomogram, and a better fit to the solid line indicates a better calibration. In the Part3 A, the calibration plots of the nomogram show that the agreement between predicted and observed mortality is acceptable.

(B) Receiver-operating characteristic curve of the nomogram for predicting in-hospital death of adult trauma patients in earthquake



The area under the curve (AUC) of the Receiver-operating characteristic (ROC) curve was 0.885 (95% confidence interval: 0.859~0.911).