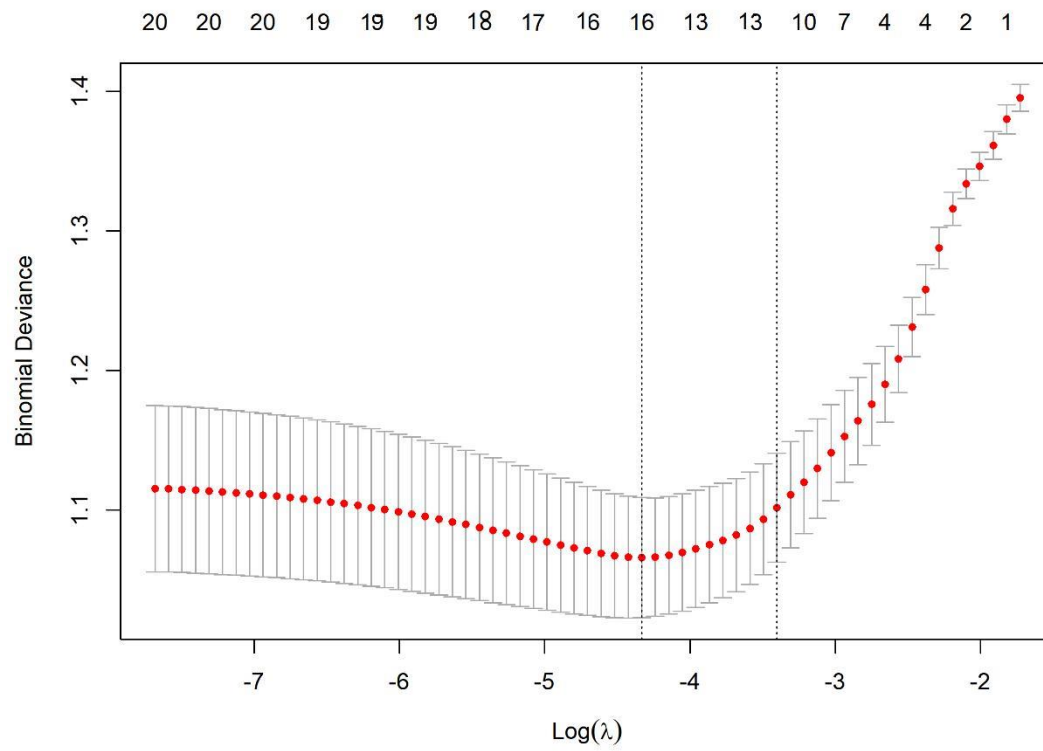
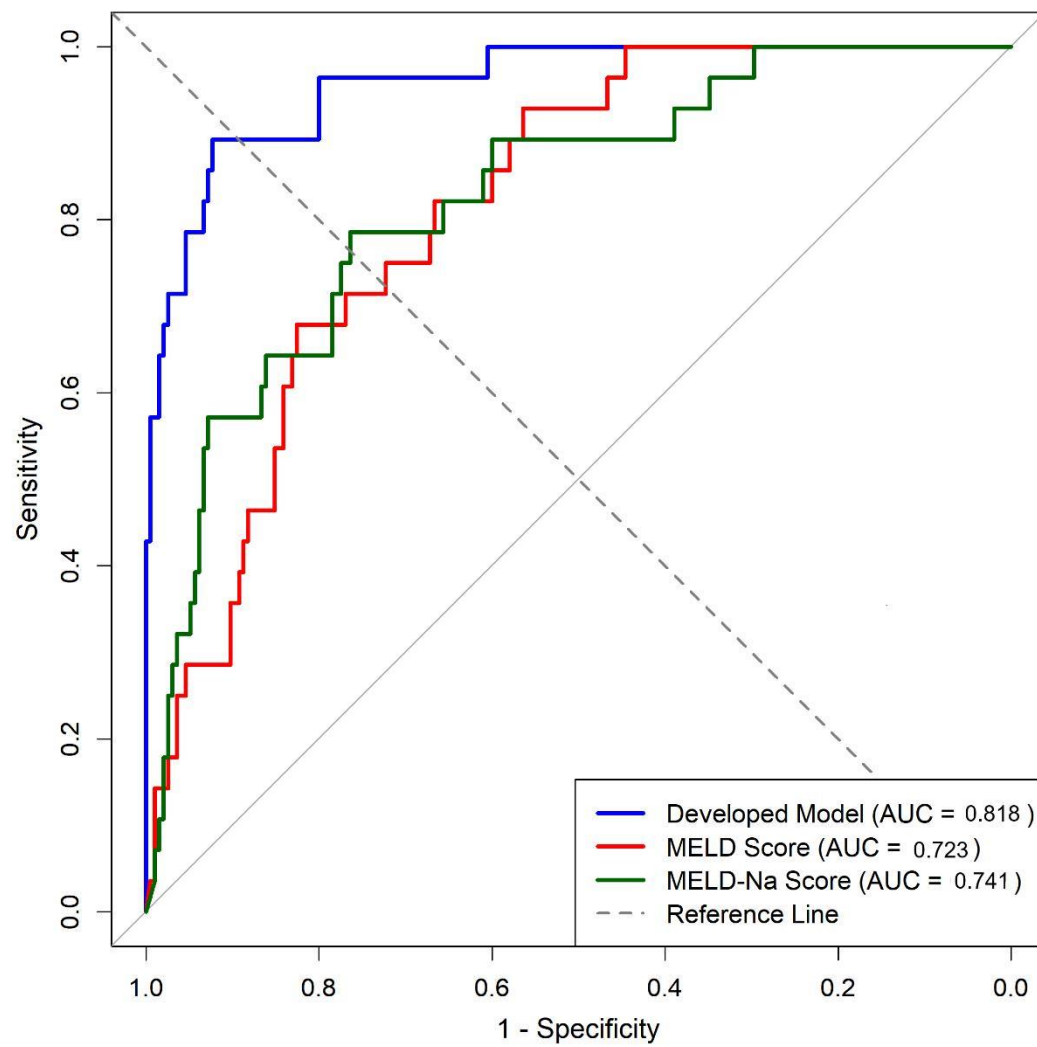


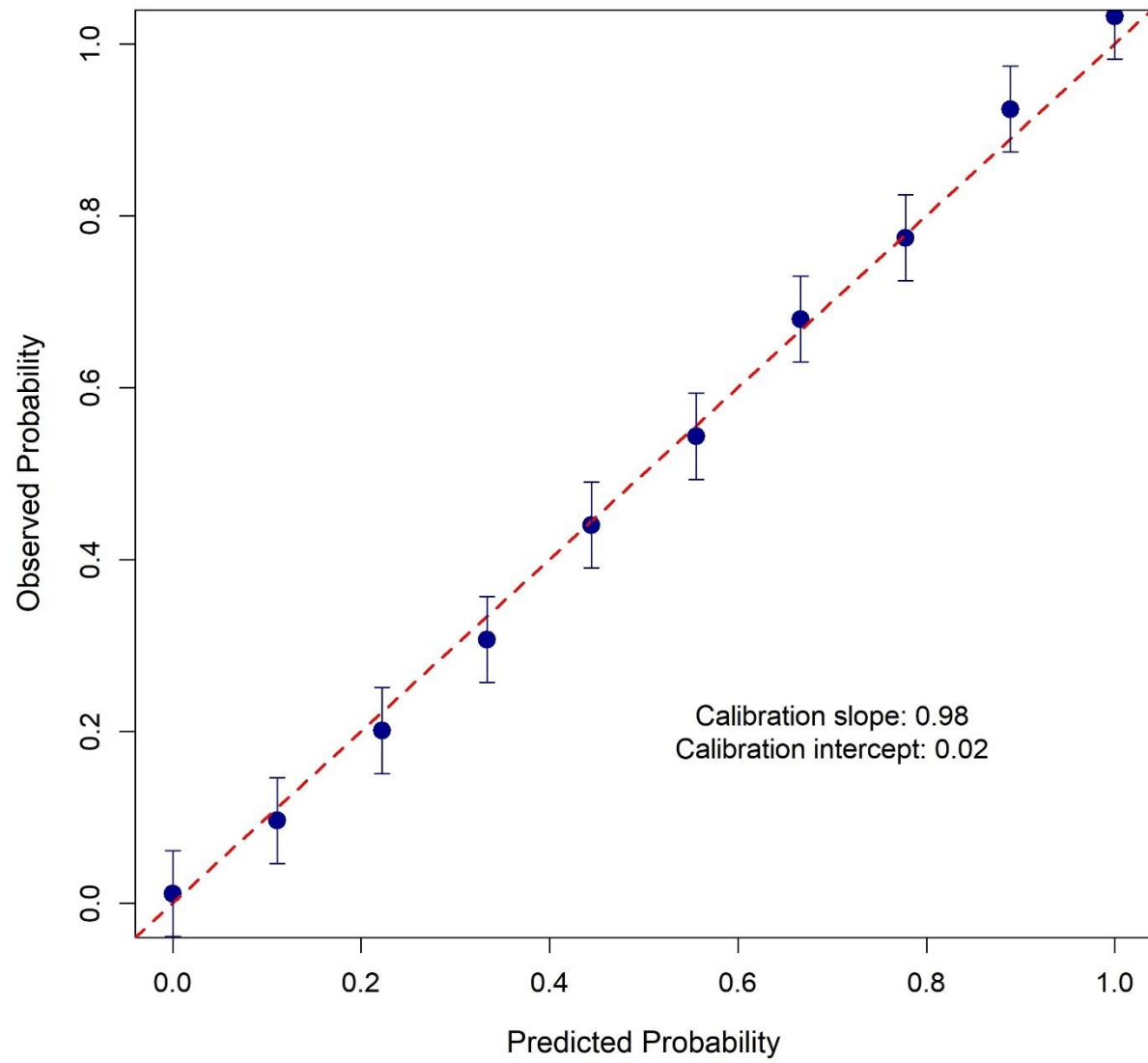
Appendix 1. Cross-validation curve with optimal lambda at minimum deviance



Appendix 2. Receiver Operating Characteristic (ROC) Curves Comparing Model Performance



Appendix 3. Calibration Plot for Model Performance Assessment



Appendix 4. Model Performance Metrics

Metric	Training Set	Bootstrap Validation	95% CI
AUC	0.818	0.801	0.742-0.896
Brier Score	0.087	0.094	0.072-0.108
Calibration Slope	0.98	0.91	0.83-1.07
Calibration Intercept	0.02	0.08	-0.15-0.21
Sensitivity (at optimal cutoff)	0.786	0.750	0.679-0.857
Specificity (at optimal cutoff)	0.754	0.738	0.692-0.815
Positive Predictive Value	0.314	0.296	0.234-0.387
Negative Predictive Value	0.963	0.956	0.928-0.984
Youden Index	0.540	0.488	0.412-0.623

Appendix 5. Bootstrap Stability Analysis of Model Coefficients (1000 iterations)

Variable	Selection Frequency	Mean Coefficient	95% CI	CV (%)
Albumin	81%	-0.789	-1.082, -0.496	28.3
Total Bilirubin	78%	0.637	0.412, 0.862	22.1
AST/ALT Ratio	83%	0.767	0.489, 1.045	31.2
Severe Inflammation	75%	1.176	0.734, 1.618	34.7
Platelet Count	77%	-0.245	-0.384, -0.106	25.6

AST/ALT ratio, Aspartate aminotransferase to alanine aminotransferase ratio