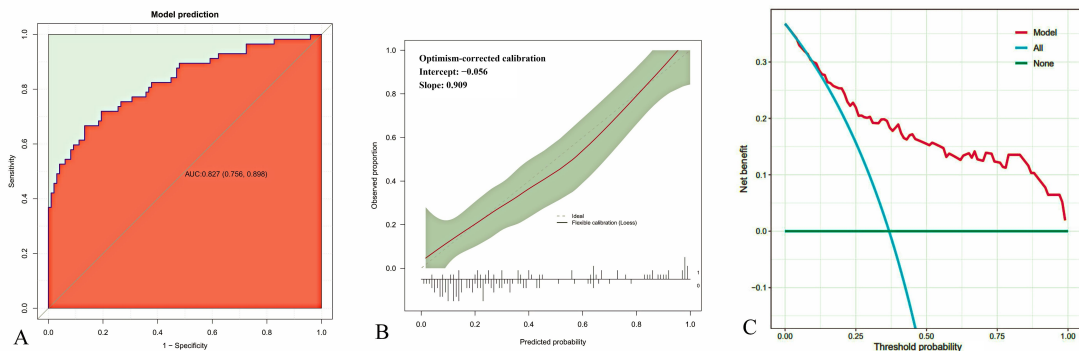
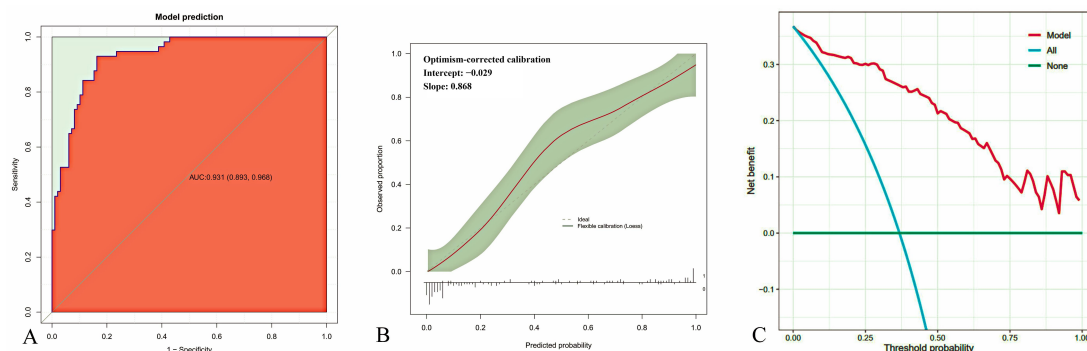


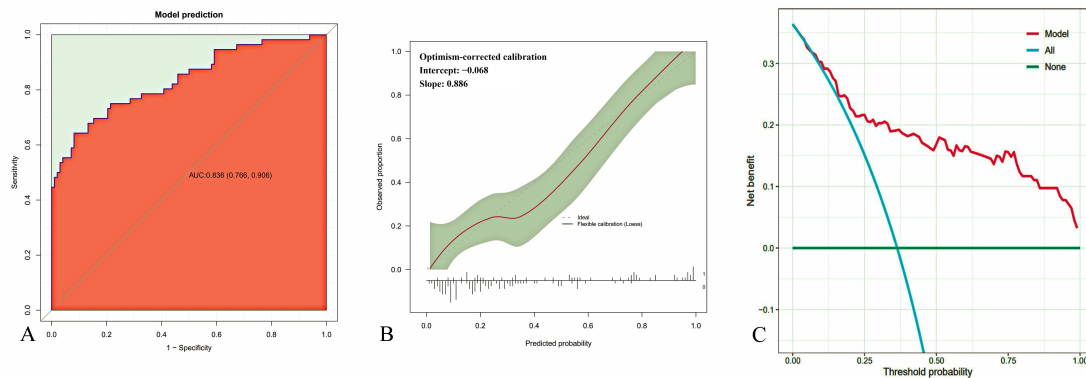


Supplementary Figure 1. Bootstrap internal validation and clinical utility of the logistic regression-based predictive model after simultaneous exclusion of pulmonary infection and mechanical ventilation. (A) Receiver operating characteristic curve showing an optimism-corrected AUC of 0.827 (95% CI: 0.756–0.898). The apparent AUC of the reduced logistic regression model fitted in the full cohort was approximately 0.841, and the mean estimated optimism derived from 1,000 bootstrap resamples was approximately 0.014, resulting in an optimism-corrected AUC of 0.827. In each bootstrap sample, the predictor set was fixed and the regression coefficients were re-estimated. The 95% confidence interval was estimated using bootstrap resampling. (B) Calibration curve showing agreement between the probabilities predicted by the reduced logistic regression model and the observed probabilities. After 1,000 bootstrap resamples, the optimism-corrected calibration intercept was -0.056 and the calibration slope was 0.909, indicating generally good calibration after internal validation. (C) Decision curve analysis comparing the net benefit of the reduced logistic regression model with the treat-all and treat-none strategies. The model provided greater net benefit than both reference strategies across threshold probabilities of approximately 0.02–0.99.



Supplementary Figure 2. Bootstrap internal validation and clinical utility of the logistic regression-based predictive model after exclusion of pulmonary infection alone. (A) Receiver operating characteristic curve showing an optimism-corrected AUC of 0.931 (95% CI: 0.893–0.968). The apparent AUC of the reduced logistic regression model fitted in the full cohort was approximately 0.944, and the mean estimated optimism derived from 1,000 bootstrap resamples was approximately 0.013, resulting in an optimism-corrected AUC of 0.931. In each bootstrap sample, the predictor set was fixed and the regression coefficients were re-estimated. The 95% confidence interval was estimated using bootstrap resampling. (B) Calibration curve showing agreement between the

probabilities predicted by the reduced logistic regression model and the observed probabilities. After 1,000 bootstrap resamples, the optimism-corrected calibration intercept was -0.029 and the calibration slope was 0.868 , indicating generally good calibration after internal validation. (C) Decision curve analysis comparing the net benefit of the reduced logistic regression model with the treat-all and treat-none strategies. The model provided greater net benefit than both reference strategies across threshold probabilities of approximately 0.02 – 0.99 .



Supplementary Figure 3. Bootstrap internal validation and clinical utility of the logistic regression-based predictive model after exclusion of mechanical ventilation alone. (A) Receiver operating characteristic curve showing an optimism-corrected AUC of 0.836 (95% CI: 0.766 – 0.906). The apparent AUC of the reduced logistic regression model fitted in the full cohort was approximately 0.850 , and the mean estimated optimism derived from 1,000 bootstrap resamples was approximately 0.014 , resulting in an optimism-corrected AUC of 0.836 . In each bootstrap sample, the predictor set was fixed and the regression coefficients were re-estimated. The 95% confidence interval was estimated using bootstrap resampling. (B) Calibration curve showing agreement between the probabilities predicted by the reduced logistic regression model and the observed probabilities. After 1,000 bootstrap resamples, the optimism-corrected calibration intercept was -0.068 and the calibration slope was 0.886 , indicating generally good calibration after internal validation. (C) Decision curve analysis comparing the net benefit of the reduced logistic regression model with the treat-all and treat-none strategies. The model provided greater net benefit than both reference strategies across threshold probabilities of approximately 0.02 – 0.99 .