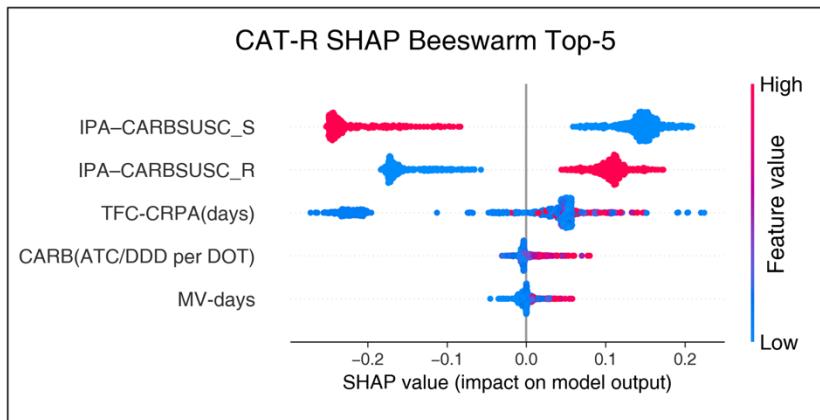
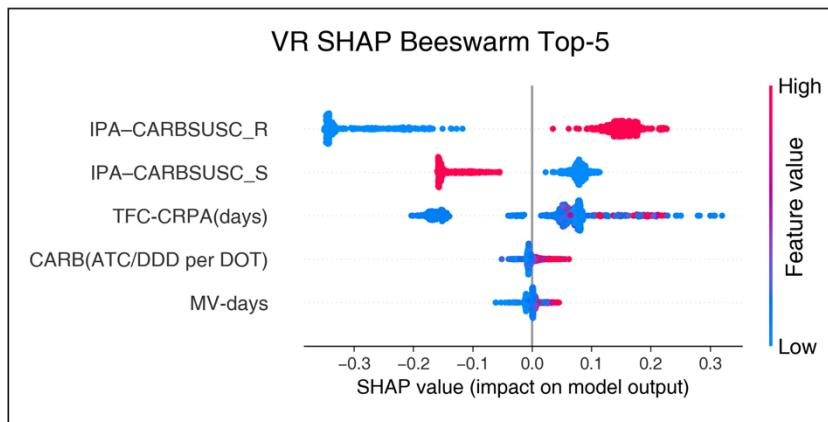


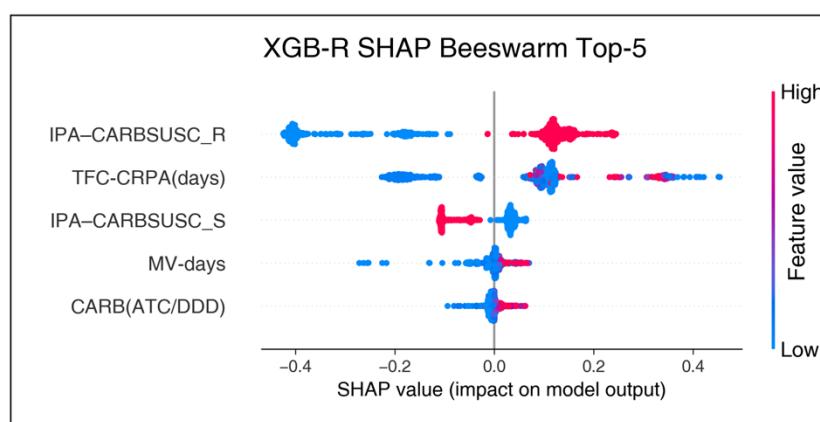
(a)



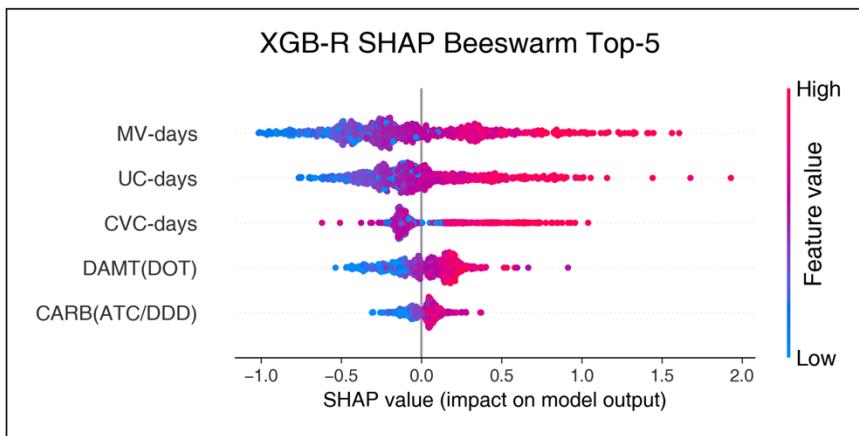
(b)



(c)



(d)



(e)

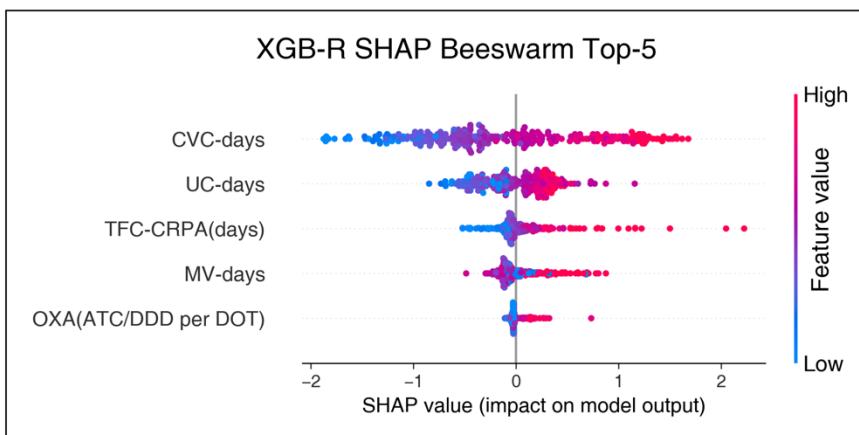


Fig. S6 Global SHAP beeswarm plots for four regression outcomes.

(a) CAT-R model for CRR; (b) VR model for CRR; (c) XGB-R model for CRR-PA-Last2; (d) XGB-R model for ICU-LOS; (e) XGB-R model for ICU-Death interval. Each plot shows the top 10 most influential predictors ranked by the mean absolute SHAP value ($|SHAP|$). Each dot represents an individual SHAP value, with the color encoding the normalized feature value (blue = low, red = high). Positive SHAP values indicate a higher predicted risk, whereas negative values indicate protective effects. The SHAP values for all remaining features are close to zero.