Supplemental Table S1. Machine learning and logistic model-based prediction models for litigation outcomes in surgical patients.

	LightGBM		Decision Tree		Random Forest		Logistic Model	
Accuracy	0.835	(0.796–0.875)	0.869	(0.827–0.912)	0.868	(0.824–0.911)	0.887	(0.860–0.914)
Precision	0.838	(0.793–0.883)	0.845	(0.802–0.888)	0.831	(0.786–0.875)	0.876	(0.835–0.917)
Recall	0.880	(0.840–0.920)	0.942	(0.911–0.972)	0.963	(0.934–0.992)	0.931	(0.902–0.960)
F1 score	0.857	(0.824–0.890)	0.890	(0.856–0.925)	0.892	(0.856–0.927)	0.900	(0.879–0.922)
AUC	0.899	(0.865–0.934)	0.867	(0.813–0.922)	0.896	(0.857–0.936)	0.907	(0.879–0.936)

The value was described as the predictive ability (95% CI). CI, confidence interval; AUC, area under the curve.

Supplemental Table S2. Machine learning and logistic model-based prediction models for litigation outcomes in inpatients.

	LightGBM		Decision Tree		Random Forest		Logistic Model	
Accuracy	0.889	(0.853–0.926)	0.889	(0.861–0.917)	0.873	(0.845–0.901)	0.882	(0.847–0.917)
Precision	0.881	(0.850–0.913)	0.845	(0.811–0.879)	0.860	(0.832–0.887)	0.870	(0.827–0.913)
Recall	0.922	(0.868–0.977)	0.978	(0.9657–1.00)	0.918	(0.878–0.958)	0.931	(0.879–0.983)
F1 score	0.900	(0.865–0.934)	0.906	(0.883–0.929)	0.887	(0.861–0.912)	0.896	(0.866–0.926)
AUC	0.921	(0.881–0.961)	0.908	(0.875–0.941)	0.925	(0.893–0.957)	0.916	(0.881–0.851)

The value was described as the predictive ability (95% CI). CI, confidence interval; AUC, area under the curve.

Supplemental Table S3. Machine learning and logistic model-based prediction models for litigation outcomes in outpatients.

	LightGBM		Decision Tree		Random Forest		Logistic Model	
Accuracy	0.706	(0.676–0.737)	0.707	(0.664–0.749)	0.736	(0.699–0.773)	0.677	(0.639–0.715)
Precision	0.730	(0.683–0.776)	0.731	(0.678–0.783)	0.739	(0.692–0.786)	0.690	(0.656–0.724)
Recall	0.729	(0.665–0.794)	0.724	(0.635–0.814)	0.795	(0.719–0.871)	0.720	(0.672–0.767)
F1 score	0.724	(0.691–0.757)	0.721	(0.672–0.770)	0.760	(0.723–0.797)	0.703	(0.669–0.737)
AUC	0.765	(0.711–0.818)	0.705	(0.649–0.760)	0.814	(0.772–0.855)	0.753	(0.701–0.806)

The value was described as the predictive ability (95% CI). CI, confidence interval; AUC, area under the curve.

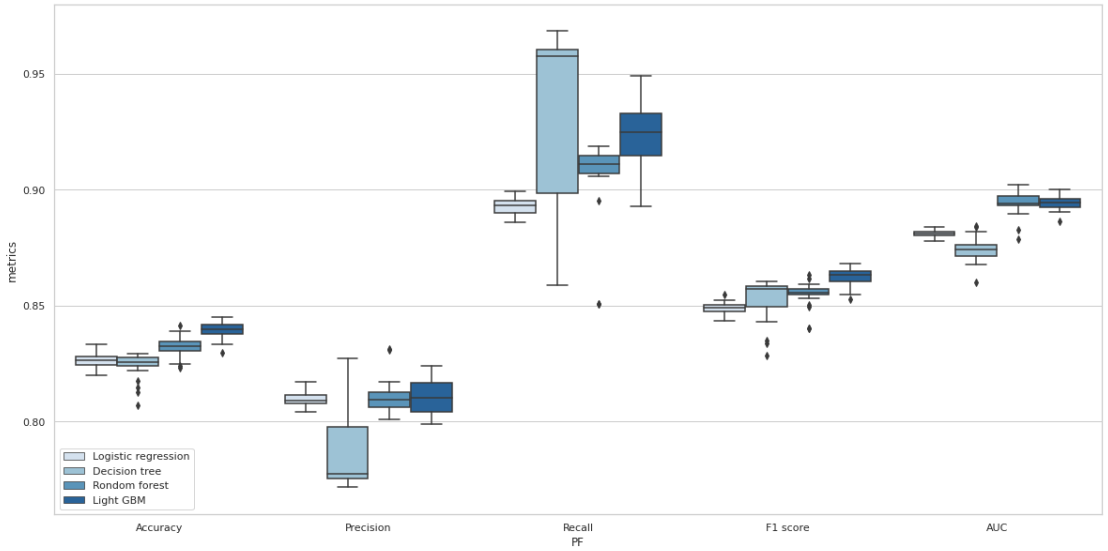
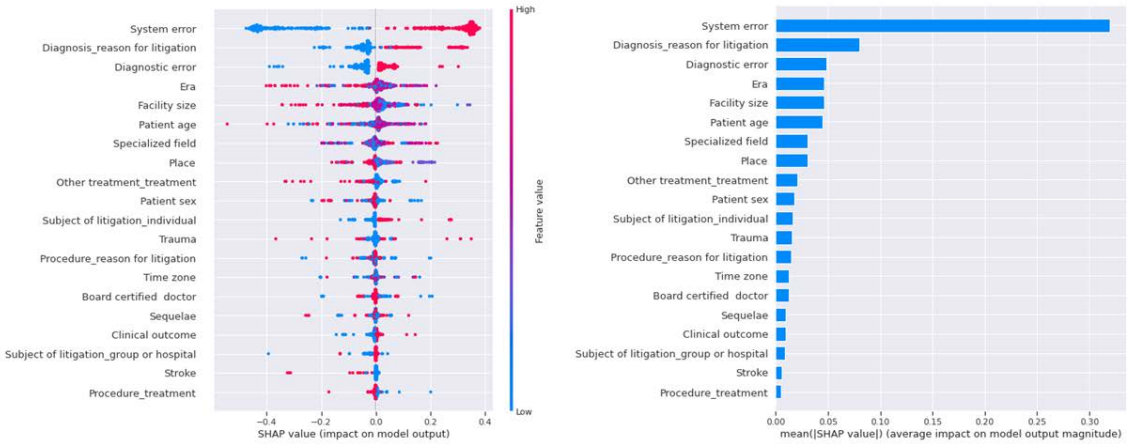
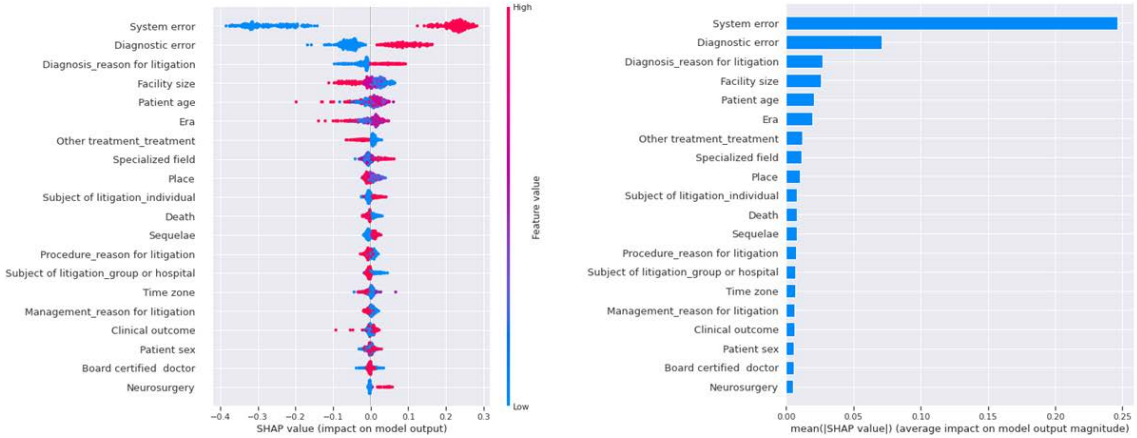


Figure S1. Performance metric evaluations of the three machine learning models and a logistic model for all cases.



(A) (B)

Figure S2. Feature importance in decision tree with SHAP.



(A) (B)

Figure S3: Feature importance in random forest with SHAP.