Metric	Deceased patients	Alive patients	Function to complete
Event Count 1. Average Event Count 2. Max Event Count 3. Min Event Count	8635, 1, 982.014	12627, 1, 498.118	event count metrics
Encounter Count 1. Average Encounter Count 2. Max Encounter Count 3. Min Encounter Count	203, 1, 23.038	391, 1, 15.452	encounter count metrics
Record Length 1. Average Record Length 2. Max Record Length 3. Min Record Length	1972, 0, 127.532	2914, 0, 159.2	record length metrics

Model	Accuracy	AUC	Precision	Recall	F-Score
Logistic Regression	0.954	0.945	0.987	0.899	0.941
SVM	0.994	0.995	0.988	0.997	0.993
Decision Tree	0.776	0.747	0.792	0.601	0.683

Model	Accuracy	AUC	Precision	Recall	F-Score
Logistic Regression	0.738	0.737	0.680	0.733	0.706
SVM	0.738	0.739	0.677	0.744	0.709
Decision Tree	0.671	0.656	0.632	0.555	0.591

Strategies:

1. Do parameter tuning. The parameters in the algorithms are using the default values. Tuning the parameters will give a better performance to the algorithm.
2. Use another algorithm. Generally speaking, the performance of deep learning is better than that of traditional machine learning methods. Algorithms like LSTM will provide a better performance.

CV strategy	Accuracy	AUC
K-Fold	0.725	0.710
Randomized	0.738	0.719

My Model:

New features: I selected the counting of DIAG, DRUG and LAB as features and used SVM to train the model. This time, I tuned the parameter C to be 0.01 to give a better performance, reaching the AUC 0.69.